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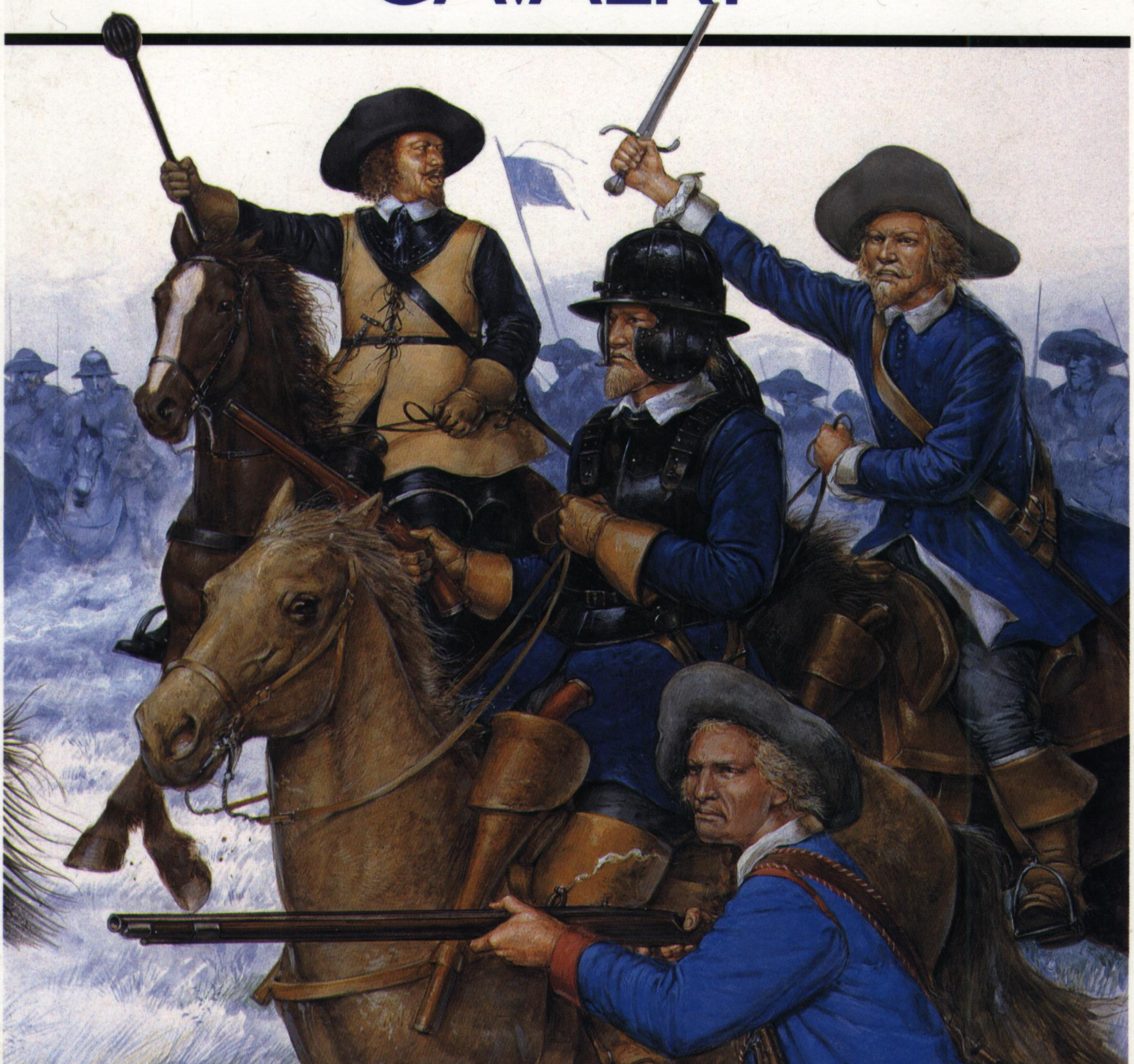
THE ARMY OF GUSTAVUS ADOLPHUS 2
CAVALRY



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Author's note:

This volume completes the two-part survey begun in MAA 235 *The Army of Gustavus Adolphus (1): Infantry*. Besides the cavalry mentioned in the title, there are short sections on dragoons, artillery, and battle tactics. Since many of the ideas put forward are at odds with 'accepted' views, a detailed bibliography has been added, together with source notes where space has permitted.

Acknowledgements:

Without the initial help of Arné Danielsson, curator of the Royal Army Museum in Stockholm (now retired), this project might never have been attempted; I must thank him above all for permission to use his research notes. I would also like to thank Keith Roberts for long discussions from which some of the theories presented here have emerged; John Rohde for his laxative effect on my often constipated brain, particularly in the layout of the colour plates; Nick Sekunda for his constant moral support; and Richard Hook for patiently turning my fussy sketches into masterpieces.

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INTRODUCTION

'Had not our foote stoode like a wall, there had not a man of us come off alyve . . . our horse did but poorely.' (Colonel Fleetwood, on the Swedes at the battle of Lützen, 1632)

Much of the fame of Gustavus Adolphus has been founded upon his cavalry. He is said to have made his cavalry attack aggressively, training them to charge in with the sword instead of halting before contact and firing ineffectively with the pistol; in so doing he is said to have reversed the stagnation of European cavalry warfare, giving it back fluidity and vigour. In fact, as Colonel Fleetwood and many other eyewitnesses record, contemporaries were not at all impressed with Gustavus's cavalry. Gustavus's alleged transformation of cavalry warfare is scarcely mentioned in 17th century military manuals.

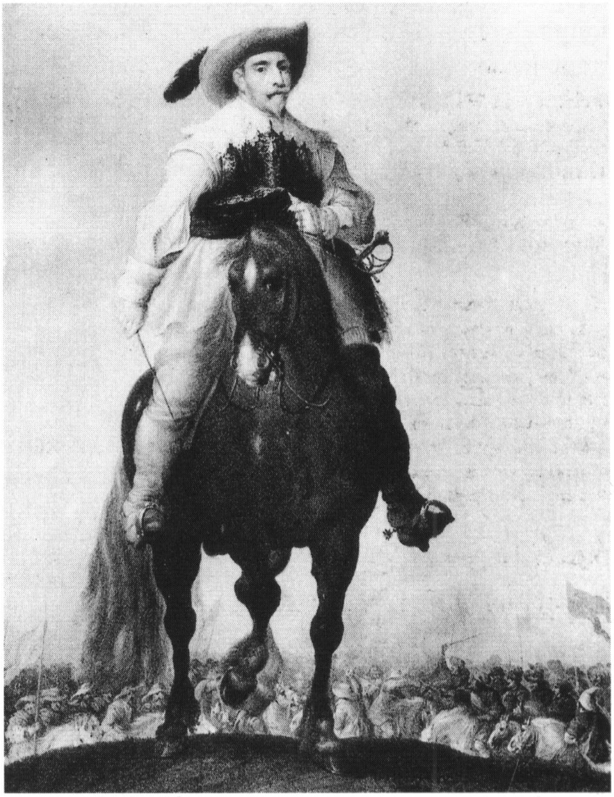
To find the truth we must, as with all the 'Gustavus mythology', set aside pre-conceived ideas—most of which are based on unsound 18th and 19th century research—and start afresh. Before we discuss what changes Gustavus did or did not make to his cavalry we must first understand what was happening elsewhere in Europe.

The cuirassier and the arquebusier

At the start of the Thirty Years' War in 1618, military theorists divided Western European cavalry into only two distinct classes: cuirassiers and arquebusiers. (Lancers were as good as obsolete by this date, and dragoons were really just infantry on horseback.)

The cuirassier (*Kürisser*, *Kürassirer*, *corazzen*) got his name from his heavy armour, the Küriss or Kürass, which covered him from head to below the knee (see Plate C1). This armour shell made the cuirassier sword-proof and almost bullet-proof, and determined his chief function: to get into the thick of the fray and decide the battle, principally with the pair of pistols he almost always carried.

The arquebusier (harquebusier, *Bandelier-Reuter*, carbine[1]) was named after his principal weapon, called variously an arquebus, *Bandelier-rohr* or carbine (see Plate G1). This firearm shaped the arquebusier's role: mostly, to skirmish in minor actions and to perform all the other campaign duties to which the heavily encumbered cuirassiers were unsuited. In pitched battles arquebusiers were to 'shoot in' the charges of cuirassiers and to protect their exposed flanks. The other equipment of the arquebusier was less important, and at best included



Gustavus Adolphus, King of Sweden, by P. van Hillegaert dated 1634. This portrait, like the great majority, was not painted from life, but copied from a published engraving. The worst of several mistakes is the metal armour, which Gustavus did not wear during the German campaign because of a wound received in Poland in 1627. (Collection of Baroness M. Bohnstedt, Stockholm) a pair of pistols, a back- and breastplate, and an open-faced helmet.

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[1] Some contemporaries regarded carbines as a separate class; but the differences were minimal.

These two patterns of cavalry were in use in most of the wealthier states of Western Europe. Both of Gustavus's main opponents—the German Catholic League (Tilly's Leaguists), and the Holy Roman Empire of the German Nation (Wallenstein's Imperialists)—had cavalry forces made up almost entirely of arquebusiers and cuirassiers. The Swedes too, by 1618, were attempting to turn out their cavalry according to these two 'modern' patterns, but with little success.

NATIVE CAVALRY

The main problem was that Sweden had never really been a cavalry nation. Most Swedish towns had been established in the time of the Vikings on easily defensible river inlets and the shores of Sweden's great inland lakes. These waterways continued to be the most convenient form of transport, since dense forests covered much of the country and the road network was still in its infancy.

The cold climate and poor winter grazing had also hindered attempts to breed good horses, and this showed in the small size of native breeds. Contemporaries were quick to apologise for Swedish horses: 'In truth they are very stout', wrote one anonymous writer, but 'in consideration of their low stature, exceedingly strong . . .'. According to muster rolls of 1622 and 1623 the horse of the native Swedish cavalry stood on average 14 hands high for officers, and only 11 to 13 hands for troopers. Even cuirassier mounts were required to be only '14 hands high behind the saddle'. The minimums in Frederick the Great's and Napoleon's armies were 14 hands 3 inches for hussars and 15 hands 2 inches for cuirassiers.[2]

Sweden's other great problem was a technology gap: Swedish workshops simply could not manufacture in bulk the basic hardware of the 'modern' cavalryman. The wheel-locks of arquebuses and pistols required expertise that would become available in Sweden on a large scale only in the 1640s; until then most such weapons had to be imported from Holland or Germany. Armour too, until the late 1620s, had in the main to be purchased abroad.

The overall situation, then, when Gustavus entered on his programme of reforms in 1620 was this: Sweden had only one permanent native cuirassier unit, the Adelsfana, in which the Swedish nobility were required to serve as part of their feudal obligation to the king: a unit which, perversely, was hardly ever called out to serve in time of war. By default, the rest of Sweden's native cavalry would have been regarded by European standards as very poorly equipped arquebusiers.

The light horseman

In 1621 Gustavus, back from his eye-opening tour of Germany and his first campaign against the Poles, decided to do something about the poor quality of his native cavalry. His measure, at first sight trivial, was quite radical in effect: he made his native arquebusiers give up their arquebuses, which appear no more in the muster rolls after 1621, and concentrated instead on supplying them with pistols. The native Swedish horseman's weapons thus became (ideally) a pair of pistols and a sword; and his armour, a back- and breastplate and an open-faced helmet.

This reform is said to have been motivated by the Swedish cavalry's poor showing against the Poles. It can also be seen from a more technical viewpoint: there was no point having arquebusiers (support cavalry) when there was hardly any attack cavalry (cuirassiers) for them to support.

As a troop type, Gustavus's cavalry reverted to the tried and tested class prevalent in the poorer, mostly Protestant areas of northern Germany in the 16th century: the light horseman (*Ringerpferd*, or in Swedish, *lätta ryttare*). The light horseman was an all-purpose cavalryman: he could carry out both shock attack and campaign duties, although neither of these as well as the more specialised European cavalry types.

Since the light horseman had more or less been forgotten on the Continent, Europeans were not entirely sure what to call Gustavus's cavalry. To many they were cuirassiers since their primary arm was the pistol and they were first line (though second rate) shock cavalry. To others (like the English) they were 'harquebusiers'—after the degree of armour rather than the firearm. Eventually the term *Reiter* (horseman) gained popularity. However, because of the rather vague and general nature of this term, the horseman was not always recognised as a distinct troop type.

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[2] Direct comparison is complicated, since in the later period horses were measured to the withers which could be several inches higher depending on breed. The 'hand' was the breadth of a man's palm—usually taken as 4 inches (10 centimetres).

Recruitment and organisation

Unlike native Swedish infantry, who were conscripts, native light horsemen were mostly volunteers. The supply of willing recruits never dried up, since the alternative for the young man of average means was to stay at home and run the annual risk of conscription to the infantry—a far more dangerous prospect, as infantry always took higher casualties on campaign.

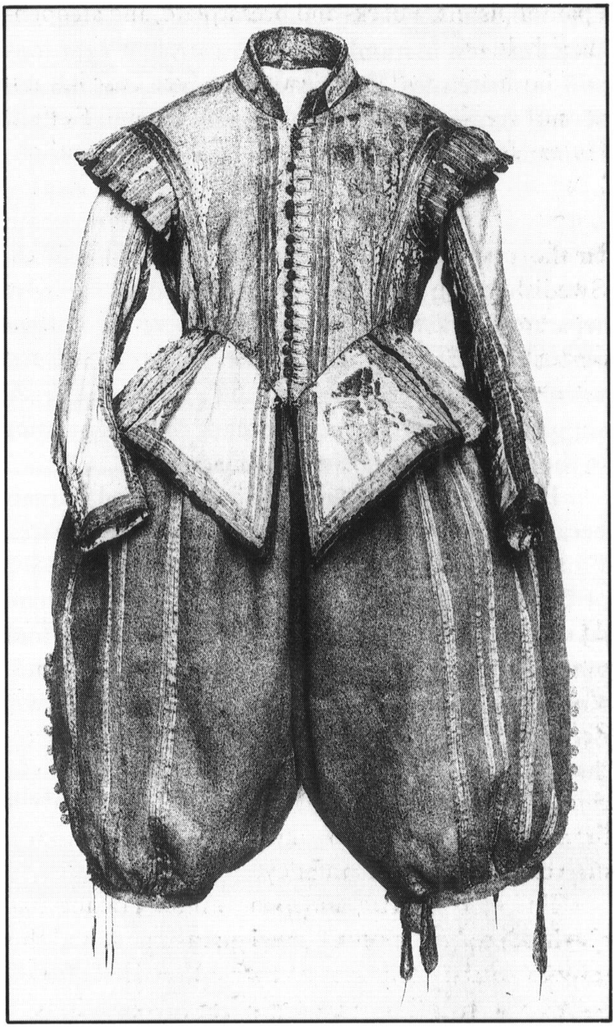
Cavalry service had other rewards: it paid relatively well (and more regularly); and the volunteer's family and servants automatically became exempt from conscription, and from several taxes besides. As a further bonus, if the volunteer survived his service he was re-established into civilian life on a farm provided at the state's expense.

Like the native infantry, the cavalry were organised into units with a regional character. At first these were only of company size, but in 1627 these companies were grouped for the first time into five regional regiments. Each regiment began about four companies strong, but by 1631 most had been brought up to the regulation eight companies each of 125 horses. A few companies were usually kept at home for defence while the others went to war overseas.

On campaign

When the Swedish cavalry arrived in Poland in 1626, constantly short of weapons, equipment and horses, they were a sorry sight by German standards. Tall Scandinavians on stunted, fat mounts, they may even have had a somewhat comical air. The situation improved slightly with purchases of horses in Poland and neighbouring countries; but as late as the battle of Breitenfeld in 1631, Tilly could still point out to his men that the Swedish cavalry were 'so badly mounted, that your baggage-boys have better horses than them'.

After Breitenfeld, central Germany opened up to Gustavus, and there were great improvements in the native cavalry's horses. Gustavus husbanded these jealously during the disastrous siege of Wallenstein's camp in summer 1632, giving his countrymen preferential foddering—much to the disgust of the German mercenary cavalry, whose horses starved to death in their thousands.



The clothing worn by Gustavus at Klein-Werder near Danzig (Gdansk) on the night of 2/3 June 1627. Gustavus was crossing the Vistula in a small boat during a minor skirmish when he was hit by a musket shot. The ball entered above his right hip, and lodged between the fat and muscle above his navel; it was a minor wound, and he was riding again within a week. The silver-coloured satin doublet bordered in silver galloon has deteriorated greatly with age, so that the 'pinked' (punched) holes are only just visible. The breeches are of grey Spanish cloth. (LRK 3375 and 3849)

By the battle of Lützen the god-fearing Swedish native cavalry, with their iron discipline, years of experience and regimental traditions, were undoubtedly the best horsemen Gustavus had available. But they were few in number, and in a straight fight were still no match for Wallenstein's cuirassiers, who on several occasions rode clean through them like a knife through butter.

Finnish cavalry

In the 17th century Finland was a province of the Swedish realm, and though Finnish soldiers served in separate Finnish regiments these were an integral part of the Swedish army. The impoverished and unruly Finns (much like England's Scots and Irish) supplied a far higher proportion of their population to the army than their Swedish masters.

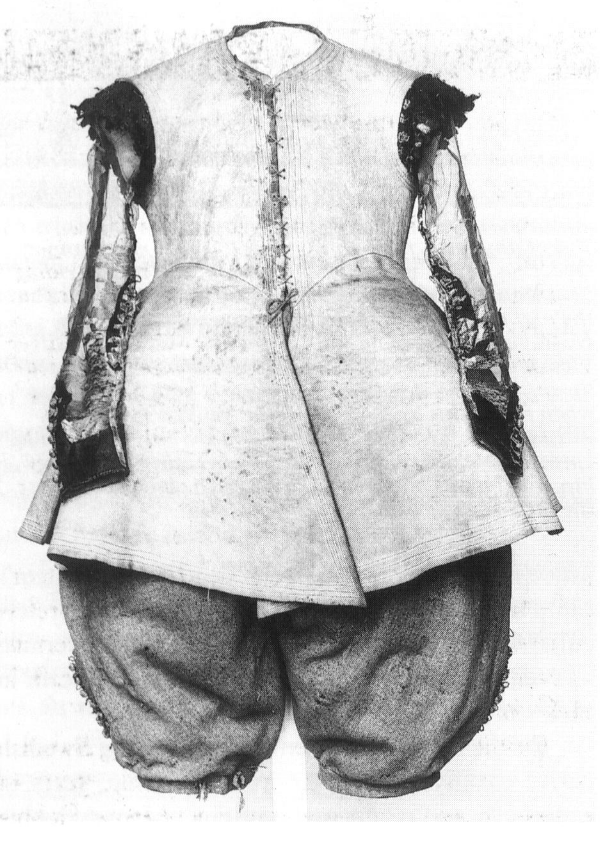
Finnish cavalry were particularly good, largely because of contact with Russia and the Baltic states. Finnish horses were greatly improved by the infusion of Eastern blood; and the Finnish horsemen themselves, already lawless cattle-rustlers by nature, took readily to the wild Eastern way of war on horseback. Very soon after their arrival in Germany the Finnish cavalry achieved notoriety as the 'hackapeliter' or 'hackapells' (Finnish *hakkapelitta*), derived from their war-cry '*hakkaa päälle!*' ('Hack 'em down!'). In savagery and brutality they had few rivals. After the battle of Oldendorf in 1633 the Scottish mercenary James Turner personally witnessed 'A great many kill'd in cold blood by the Finns, who professe to give no quarter'. 'God save us all,' wrote petrified German clerics, from the '*agmen horribile haccapellitorum*'—'the terrifying onward march of the hackapells . . .'.

Finnish cavalry were organised much as the Swedes. They increased rapidly in numbers from just four companies in 1618, settling at 24 in 1628. They were not, however, at first organised into regional regiments. While stationed at home most remained under the command of a single 'Colonel of the Finnish Cavalry'. Companies were taken out of this pool as required for service overseas. Only 12 companies went to Germany with Gustavus; these were under the overall command of Colonel Torsten Stålhandske, who in 1634 became Major-General and chief of all the Finnish and native Swedish cavalry in Germany.

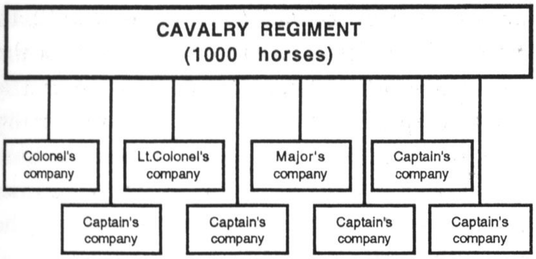
The 1634 Form of Government

The 1634 'Form of Government' was Sweden's first constitution. It laid down in formal terms how the newly emergent Baltic superpower would be run. One paragraph set down the organisation of the army, and listed for the first time the native cavalry regiments in the following order of precedence:

Adelsfana (Nobles)
Uppland
Västgöta
Åbolän-Björneborg (Finns)
Småland
Nyland-Tavastehus (Finns)
Östgöta
Viborg-Nyslott (Finns)



Gustavus's clothing from the battle of Dirschau in August 1627, where he was shot by a Polish marksman. According to Dr. Salvius, the bullet entered 'Just over the clavicle, two fingers from the windpipe on the right shoulder and now sits . . . between the spine and the top corner of the shoulder blade . . . and presses the nerve, which . . . gives the right arm all its movement and feeling, therefore His Majesty's two smallest fingers of the right hand are somewhat deadened'. The bullet was, it seems, never removed, and prevented Gustavus from wearing armour. The buffcoat was nicked by the bullet at the neck and has bloodstains down the front. (LRK 3369 & 3372)


CAVALRY REGIMENT
(1000 horses)
Colonel's company
Lt.Colonel's company
Major's company
Captain's company
Captain's company
Captain's company
Captain's company
Captain's company

Regimental Staff (Native Regiment)

- Colonel
- Lieutenant-Colonel
- Major
- Regimental Quartermaster
- Regimental Clerk
- Regimental Surgeon

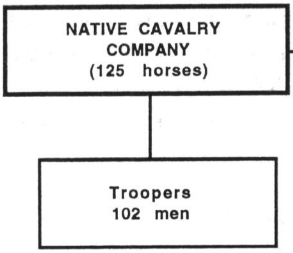
Total 6 Persons

Regimental Staff* (Mercenary Regiment)

- Colonel
- Lieutenant-Colonel
- (Sergeant-) Major
- Regimental Quartermaster
- Schultz
- Regimental Clerk
- Provost
- Boys (3)
- Chaplains (4)

Total 14 Persons

(* Exact structure varies)

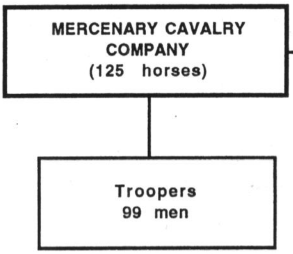

NATIVE CAVALRY COMPANY
(125 horses)
Troopers
102 men

Company Staff*

Captain¶	4 horses
Lieutenant	3
Standard-bearer	3
Corporals (2)	4
Furrier	2
Muster clerk	1
Chaplain	1
Provost	1
Barber (Surgeon)	1
Blacksmith	1
Trumpeters (2)	2

Total 13 Persons with 23 horses

(* Exact structure varies)
(¶ or Col, Lt.-Col, Major)


MERCENARY CAVALRY COMPANY
(125 horses)
Troopers
99 men

Company Staff

Rittmeister¶	6 horses
Lieutenant	4
Cornet	3
Quartermaster	2
Corporals (3)	6
Trumpeters (2)	2
Feldscher (Surgeon)	1
Blacksmith	1
Muster clerk	1

Total 12 Persons with 26 horses

(¶ or Col, Lt.-Col, (Sgt-) Major)

Though differing in details, the organisation of native and mercenary cavalry regiments was essentially the same. At full strength both numbered 1,000 'horses' organised into eight companies. Officers were required to provide a different number of spare horses depending on their rank, but these were mostly riderless or in contemporary jargon 'empty'. Thus a company of 125 'horses' numbered in reality about 100 troopers plus a dozen or so officers. Cavalry units of four or twelve companies were also raised.

Table A: Native Cavalry sent to Germany, 1630–33

Östgöta
499 'horses' in 4 coys. shipped July 1630.
Commander: Claus Dietrich Sperreuter to late 1631; Lennart Nilsson Bååt to November 1632. *Standards:* red.

Västgöta
1,042 'horses' in 8 coys. shipped July 1630.
Commander: Erik Soop to late 1631; Knut Soop. *Standards:* green.

Småland
1,001 'horses' in 8 coys. shipped 1630.
Commander: Count Per Brahe; 1630/31 Jon Lilliesparre; July 1631 Fredrik Stenbock. *Standards:* blue; from 1635 yellow.

Uppland
508 'horses' in 4 coys. shipped August 1631.
Commander: Isak Axelsson Silfversparre. *Standards:* red.

Södermanland
495 'horses' in 4 coys. shipped Sept. 1631.
Commander: Otto Sack. *Standards:* blue, with yellow fringes.

Finland
896 'horses' in 7 coys. arrived 1630 (three in August, four in November). 629 'horses' in 5 coys. shipped May 1631 (four of them under Eckholt). *Standards:* unknown, but each company probably had a different colour. These operated in the following semi-independent squadrons, each of four companies:

1st squadron
Commander: Torsten Stålhandske.

2nd squadron
Commander: Reinhold Wunsch; Feb. 1632 Henrik Nöding; 1633 Johan Wittenberg.

3rd squadron
Commander: Hans Eckholt; June 1633 Arvid Wittenberg.

The Adelsfana of nobles, which existed for most of the time on paper only, remained the senior national unit. Each of the dependent territories of the Swedish Empire, such as Livonia and Swedish Pomerania, later raised its own Adelsfana.

The most dramatic changes occurred in the volunteer regiments, and were carried out by 1636. The Södermanland cavalry was disbanded, and its recruiting areas were added to those of the Uppland and Östgöta cavalry. The Finnish cavalry were formally organised for the first time into three regional regiments, which remained an integral part of the Swedish army until Finnish independence in 1809.

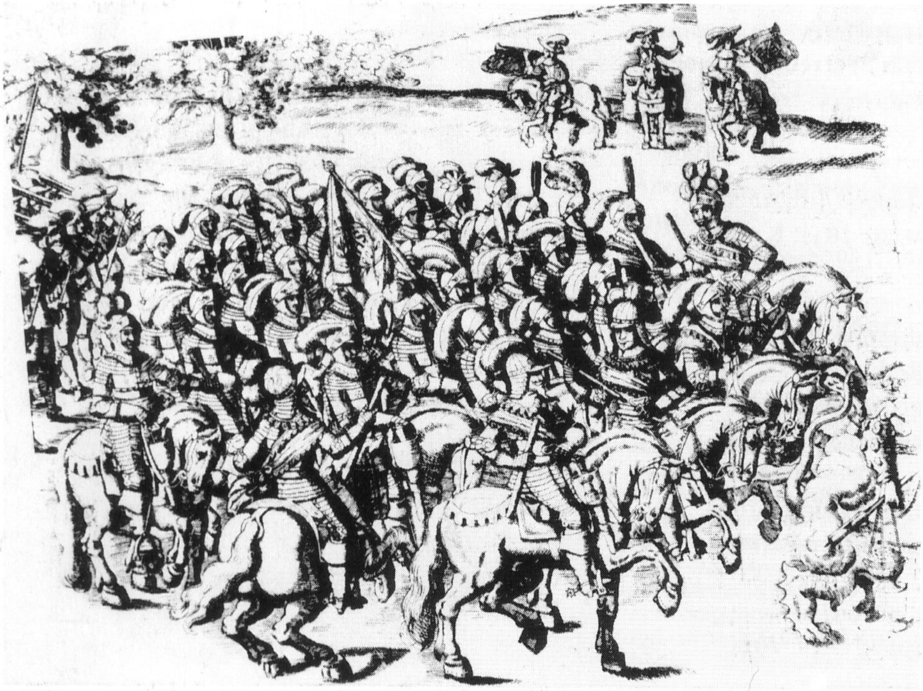
GERMAN CAVALRY

The Swedes had long been supplementing their native horsemen with German mercenaries, though they rarely had more than a few hundred at any one time. The first important additions came after the capture of Riga in Livonia in 1621 and the subsequent annexation of most of the province. Livonia (modern Latvia and Estonia) had been ruled by the infamous Teutonic Order since the 13th century, and was heavily settled with Germans. As a result, even as late as the 17th century Livonia had a strong knightly tradition and was better able to raise good cavalry than the Swedish mainland. The Livonians raised several companies of cuirassiers and a few companies of light horsemen for the Swedes—mostly as the 'Life Companies' of generals.

The first really large recruitment drive began only in 1626, when Col. Streiff (procurer of Gustavus's horse, 'Streiff') and Col. Teuffel went to north-east Germany to raise over 1,000 cavalry. These were all captured by the Poles at Hammerstein in April 1627, however, as they tried to join Gustavus in Polish Prussia by the land route. A few hundred who refused service with the Poles returned to Germany and were sent on by ship later that year; they became Streiff's five-company-strong squadron, which consisted at least partly of arquebusiers.

In the meantime the Polish campaign bogged down, because Gustavus had too few cavalry to risk moving far from fortresses and towns for fear of being overwhelmed by the Polish cavalry. When he did fight, his cavalry deployed behind the infantry or intermixed with them to obtain maximum fire support.

At the end of 1628 Gustavus had a stroke of good



A company of cuirassiers of the combined Swedish-Saxon army in 1631. The Swedes never had more than a few companies of cuirassiers, unlike the Imperialists and Leaguists who had many complete regiments. Three officers in the foreground wear the fashionable and comfortable open-face 'Hungarian' helmets, while the rest still have the so called 'closed' helmets. From a German print of an imagined triumph after Breitenfeld. (Kungliga Biblioteket, Stockholm) fortune when Christian IV of Denmark disbanded his mercenaries at the end of his hapless attempt to intervene in the Thirty Years' War (the so-called 'Danish Phase'). Two regiments of arquebusiers, Rheingraf Otto Ludwig's and Hünecken's, were shipped over lock, stock and barrel to Swedish service; a third, Baudissin's, was formed in Germany around a cadre of disbanded ex-Danish veterans. This sudden influx of over 3,000 horsemen nearly doubled Gustavus's cavalry strength in Polish Prussia, and for the first time he felt confident enough to risk expeditions into Poland proper—and more importantly, into Germany.

Little further cavalry recruitment was attempted before the German campaign, though some were raised in Livonia and neighbouring Courland, partly ex-Polish service veterans. Many previously independent companies—especially of cuirassiers—were

Table B: Principal Mercenary Cavalry Regiments

Raised before the German Campaign:
1626 J. STREIFF v. Lauenstein –30 M. Pensen v. CALDENBACH –31 J. Bernhard v. Öhm (or Ehm) –35 to French pay.
1628 Wulf H. v. Baudissin (12 coys.) –33 Lorentz v. Hofkirchen –35d?.
1628 Rheingraf Otto Ludwig (12 coys.) –34 etc?.
1628 C. v. Hünecken (5 coys.) –31 Nicolas de Courville –34d.
Livonians: 1630 Fabian Aderkas (or Adrikas) –31 Tiesenhausen –34 etc.
Courlanders: 1630 E. Dönhoff –32 Wrangel –34 etc.
1630 Graf J.P. v. Ortenburg ('The King's Life Regiment' to 1631) –31 G? v. Uslar –34d?.

Raised in Germany before Breitenfeld:
1630 Åke Tott –32 Carl Joachim Karberg –34d.
1630 Sigfrid v. Damitz –31 Fr. M. v. Uslar –32 Markgraf Christoffer of Baden –32 W. Wendt v. CRATZENSTEIN –34d.
1630 Adolf D. v. Efferen called HALLE –31 G.Ml. Witzleben –32 Gustav Horn –34 G. Ml. Witzleben –42? etc.
Bohemians/Silesians: 1631? Adam Schaffmann –33d?.
Slavs/Pomeranians: 1630/31 Andreas Kochtitzky (the younger) –33 Joachim E. Crockow –37 etc?.

Raised in Germany after Breitenfeld:
1631 Duke Bernhard of Sachsen-Weimar (The 'King's Life Regiment' to 1632) –34 Bouillon –35 to French pay.
1631 Duke Wilhelm of Sachsen-Weimar –35 Wolframsdorf –35 to Saxon service.
1631 Duke Ernst of Sachsen-Weimar –34 Bodendorf –35 to French pay.
1631 Graf H. v. SOLMS-Laubach –32 Cl. Conrad Zorn v. BULACH –34 Markgraf of Ansbach –34d.
1631 Robert MONRO of Foulis (Germans) –33d?.
1632 J. Banér –41 etc.
1632 Patrick Ruthven (Germans) –34 etc?.
1632 W. Goldstein –33 P. Sadler –34d.
1632 J. Berghofer –34 etc?.
1632 Paul Khevenhüller –32d.
1632 Wulf D. Truchsess –32d.
French: 1632 Jean de Gassion (company, later squadron) –34d?.

Key: The first date is the year of levying, other dates (e.g. '–32' = 1632) show changes of commander; d = unit disbanded; v. = von; Christian names—Ch = Christof, Cl = Claus/Clas, D = Dietrich/Didrik, E = Ernst, G = Georg, J = Johann/Johan, H = Heinrich/Henrik, M = Moritz, Ml = Melchior, P = Philip/Filip, W = Wilhelm. In complex names, the part in capitals is the abbreviation normally used.

Note that this is only a small selection of regiments. Many more were raised, especially after Breitenfield.

brought together under the Count of Ortenburg to form the King's 'Life Regiment of Horse'. In all, however, no more than ten companies of fully armoured cuirassiers went to Germany.

After Gustavus's victory at Breitenfeld the Protestant German nobility, previously hesitant and sceptical of Gustavus's abilities, flooded to volunteer their services. Though many of these recruits were ill-disciplined rabble out to fill their pockets, there was a hard core of experienced veterans who had been fighting (unsuccessfully) since the beginning of the Thirty Years' War in Protestant armies under the Kings of Bohemia and Denmark and Count Ernst of Mansfeld. They brought with them more than a decade of hard-won military experience.

Most of the mercenary cavalry—including the regiments of arquebusiers levied in the 1620s—were now termed by the Swedish administration simply as 'horsemen'. Judging from prints, a fair proportion were in fact still arquebusiers and fully armoured cuirassiers. In 1632 the Swedes specifically recruited 300 '*Arkebusier*' or '*karbinryttare*' in Switzerland.

The influx of cavalry was balanced by that of infantry, so that the proportion of cavalry to infantry in Gustavus's main field army stayed constant at around 1 to 2—indeed, so constant was this ratio that this must have been deliberate policy. In the later 1630s, because of the shorter overall life expectancy of infantry, and the rapid marches that became the norm, the ratio regularly exceeded 1 to 1; and at the battle of Wittstock in 1636 there were five horsemen to every four foot soldiers.

CAVALRY ARMOUR & EQUIPMENT

By the 1580s soldiers in the Low Countries and France were already discarding parts of their armour. They justified this by saying that there were no more pitched battles—only skirmishes, which required maximum mobility. Gustavus may have unwittingly taken this trend a stage further when he personally stopped wearing armour after he was badly wounded at Dirschau in 1627. His officers, whether wishing to emulate the great man or simply to lighten their loads, followed suit.

At the storming of Frankfurt-an-der-Oder in 1631, according to the Swedish Intelligencer, many Swedish officers 'out of the bravery of their courage' prepared to risk the assault unarmoured, and had to be personally ordered by Gustavus to put on their armour: 'For if my officers be killed, who shall command my soldiers?'

But apart from the policy of forcing his men to wear armour, there was the problem of supplying it in the first place. Gustavus was having difficulties even in the early stages of the German campaign. On 6 November 1630 he told Gustav Horn: 'We have written to you about horseman's armour, because you will receive in all [only] 1,200 [sets], therefore both Baudissin's and the other Prussian cavalry [i.e. mercenary regiments being sent from Prussia], as long as there is a problem, shall be armed so that each company is given 45 armours to equip the first three ranks of 15 horses.'

Aside from implying that Gustavus was still deploying his cavalry at least five deep (in the Dutch manner) as late as 1630, this letter presaged even more serious armour shortages among the new mercenary regiments raised in 1631. In January 1631 Gustavus placed an order with the arms manufacturer Louis De Geer for 4,000 light horseman's armours and 4,000 cuirassier ('*curasz*') armours. But the delivery had still not arrived by the battle of Breitenfeld, where the Brandenburg liaison officer Rittmeister Burckersdorf reported that: 'Few of his [Gustavus's] officers and soldiers had armour compared with the enemy who were armoured from head to foot.'

Gustavus's victory at Breitenfeld was a turning point. It told him something new: that it was infantry and artillery firepower and not cavalry body armour that won battles. In September 1632, when De Geer finally delivered a large batch of cavalry armours, he got only a breathless torrent of complaints from Gustavus's inspector:

'I have searched through them four times and have got no more than 197 [good] items . . . They are not polished, not filed either, and [there is] not one harness that does not have flaws and some holes, and around the neck [is] so sharp that one may rip asunder both clothes and hands; and they have such poor leather [straps], that if one bends on the leather a little it comes off, and the [black] colour is so badly finished that it looks like pitch, and there is not a single helmet that is made according to my proof...' Even though De Geer's armours were no worse than any he had supplied earlier, Gustavus cancelled the order entirely: new armour for the cavalry had become a low priority.

After the battle of Nördlingen in 1634, with the defeated Swedes on the run, warfare became even more fluid. On the last day of 1635 Chancellor Oxenstierna wrote home from Germany that 'No horsemen's or soldiers' harness or pots need be sent here, since they have become little used, but mostly cast off because of the long marches one is engaged in here (AOSB I:14, p.391). Armour was never worn again to the same degree. The 'Swedish phase' of the Thirty Years' War (1630–1635) clearly marks the beginning of the end of the widespread use of metal body armour.

The lightened cuirassier

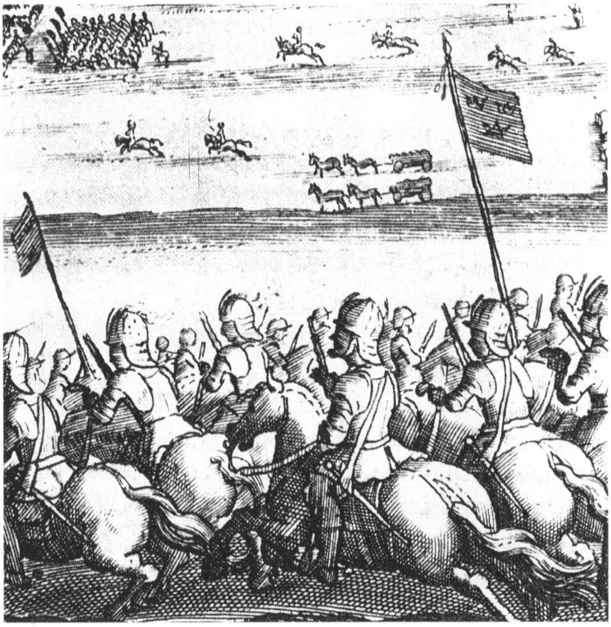
The Imperialists soon lightened their own cuirassiers for the same reason as the Swedes. The last large batches of full cuirassier armours were produced in about 1635. Some officers continued to wear their ornate suits much later (though not as often as portraits would indicate); but cuirassier troopers reduced their load to a pistol-proof breastplate and thin backplate—armour that was also (confusingly) known by the term 'cuirass'. The other classes of cavalry also began to wear less armour: 'And now...' wrote the Swedish army veteran James Turner, 'instead of Cuirassiers we have Harquebusiers, and instead of Harquebusiers we have Horsemen, only armed offensively' [i.e. without armour].

Though the lightening of armour was an international trend, the Imperialists gave much of the credit to the Swedes. When, for example, the renowned General Montecuccoli was giving advice to the Duke of Modena for the equipping of an army in 1643, he wrote: 'Cuirassiers should be equipped with breast and backharness, stormhat [i.e. helmet] together with two pistols and a sword. This is the way that the Swedish cuirassiers are armed.' Montecuccoli's 'Swedish cuirassier' was simply Gustavus's light horseman by another name. As the model for the Imperialist cuirassier it survived little changed well into the 19th century. It is perhaps not stretching the point too far to say that even the French cuirassiers at Waterloo were descended from Gustavus's cheap and manoeuvrable light horseman.

BUFFCOATS AND UNIFORMS

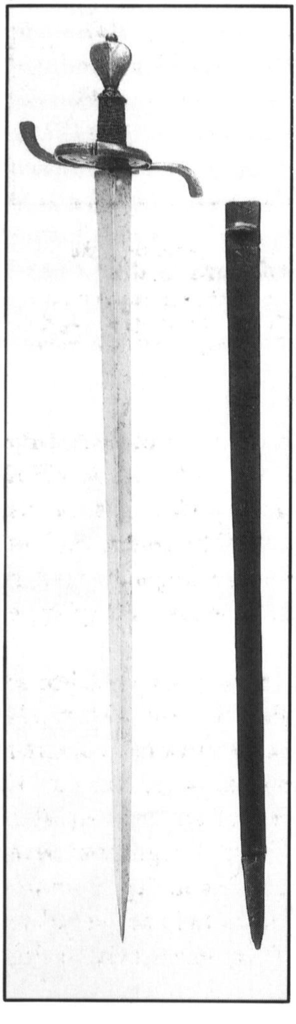
It has long been assumed that Thirty Years' War cavalry all wore leather buffcoats. Many military writers of the period recommended them, and they are a prominent feature in surviving portraits. Though there is good evidence that they were commonplace in the 1640s and '50s, no actual proof has so far been found that they were widely worn by Swedish cavalry during Gustavus's lifetime.

The fashion for buffcoats only really gained a hold in Europe in the 1610s and '20s, and it may have taken even longer for it to reach Sweden. Dutch



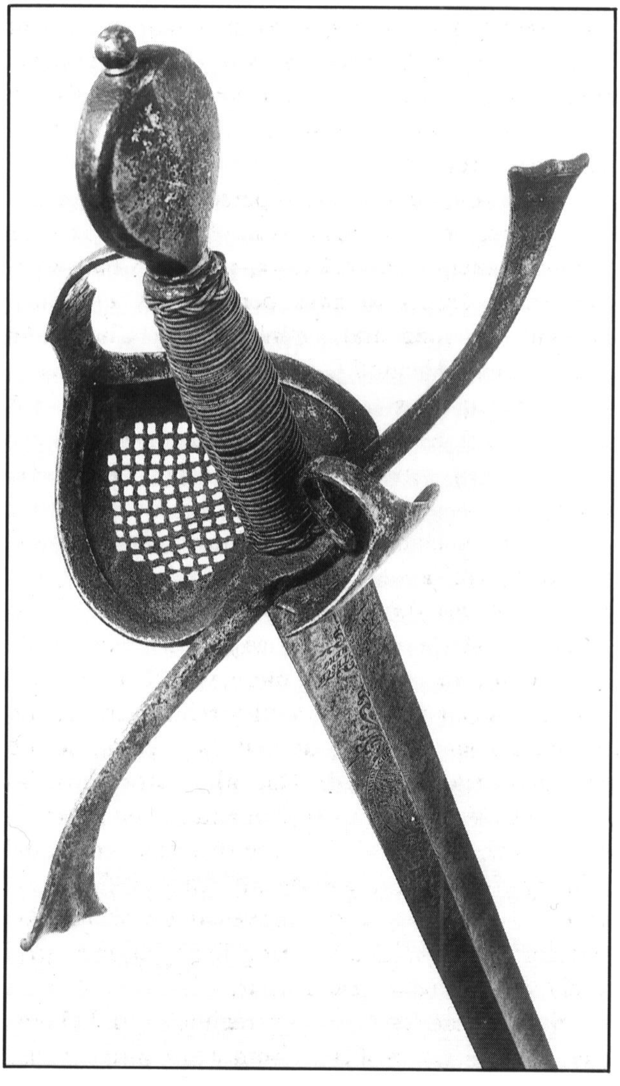
These cavalry are identified as Swedes by the three crowns on their standards. They are surprisingly well armoured: the shoulder pieces suggest cuirassiers who have discarded their cuisses. Their helmets are of Hungarian style—with a nasal bar and broad cheek guards—a type popular in all central European armies. Detail from a 1632 equestrian portrait of Gustavus by J. van der Heyden. (Kungliga Biblioteket, Stockholm) paintings suggest that as late as 1634 many Swedish troopers still did not wear them. With the abundance of elks in Scandinavia—the raw material for the best buffcoats—this may seem slightly odd. It is said, however, that an ancient Swedish custom made all Swedish elkhide the personal property of the king, and this may have delayed adoption in Sweden.

Buffcoats were also expensive: 'Not a good one to be gotten under £10, a very poor one for five or six pounds', according to the well-known quote of an English writer in 1640. The high quality elkhide buffcoats with buckskin sleeves issued to the King's Lifeguard (Drabant) company in 1632 cost 12 Riksdaler (£2.67) for old ones, and nearly 20 Rdr (£4.44) for new ones in materials alone (WardAccs 1632, item 29). These were sizable sums, considering that an ordinary Swedish trooper's armour and helmet could be had for four to five Riksdaler (about £1).



This type of sword with its 'S'-shaped quillons, flattened pear-shaped pommel and simple, clean lines was the typical sword of the Swedes in the Thirty Years' War, and has come to be called the 'Swedish' sword. It had its origins in the Netherlands, and is thought to have come to Sweden through the bulk purchases of weapons from Holland. The blade comes from the famous German sword town Solingen, and is dateable to between 1620 and 1640. Total length is 1.072 metres. (Skokloster 12342)

The image of the 1630s buffcoat that survives today is the officers' version, not the trooper's: few troopers could afford to have their portraits painted, and few of their workaday buffcoats have ended up in museums. Cheap and simple buffcoats made from ox- or cowhide could have been worn by troopers at a fraction of the price of officer's buffcoats. Unfortunately, little documentary evidence for them has turned up so far in Swedish sources. It may be that buffcoats were purchased by individuals or on a regimental basis, perhaps in the same way as other leather goods such as saddlery and horse furniture. Whatever the truth of the matter, the 'classic' buffcoat with buff sleeves of the type worn by Gustavus at Lützen seems to have been a novelty in 1632: at that date sleeveless ones were more common.



Right *Close-up of another Dutch-Swedish sword, this time with an upturned guard and thumb-ring. The flattened pear shape of the pommel and binding of the hand grip are especially clear. It once hung over the grave of a Swedish lieutenant-colonel at Yttergrans church. (Livrustkammaren 10/23)*

The riding jacket

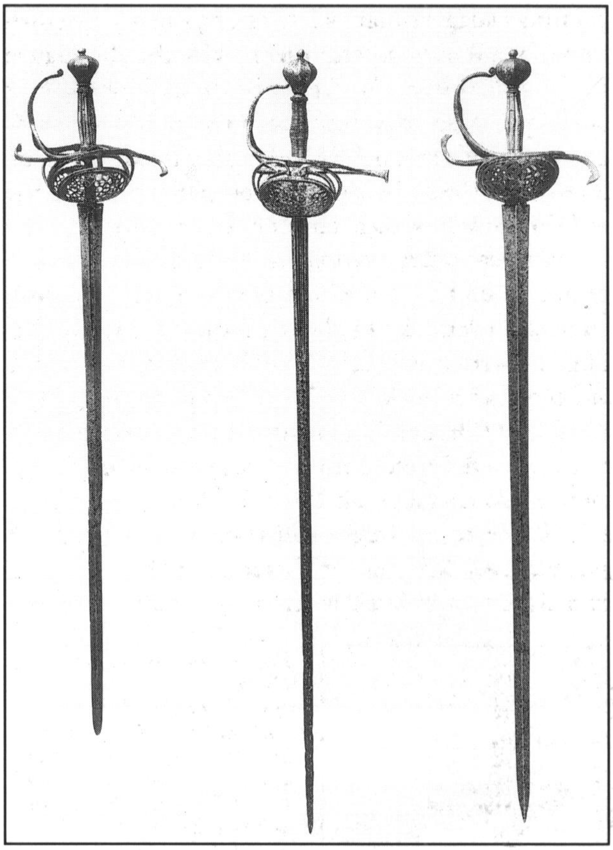
Another argument against the use of the buffcoat by Swedish cavalry is evidence that many wore cloth garments instead. The Dutch paintings already mentioned show Swedish horsmen wearing unwaisted cloth jackets much like those of the infantry, but slightly longer in cut.

Though cavalry generally could wear whatever clothes they pleased, in parts of mainland Europe some were issued with uniform jackets as late as the 1620s. These garments seem to have been called 'riding coats' or 'riding jackets' (German *Reitrock*, Swedish *ridjacka*). In 1612 an instruction for troops raised in Moravia, but probably typical of much of the Imperial army, recommended that cavalrymen should wear 'Clothing as they wish, only that the same regiments or companies should have special coats [*Röcke*] in the same livery or colour, since not only is it an ornament and a comfort, but also is serviceable to the horse in all actions to keep them together better.'

The riding jacket was superseded by the buffcoat, but we do occasionally read of it as the garment of foot soldiers (see MAA 235, p.22). In backward Sweden, it seems to have persisted as a cavalry garment: in 1622 and again in 1623 Chancellor Oxenstierna estimated the cost of issuing all 2,300 native cavalry their 'annual clothing': 4 ells of *piuk* cloth for troopers; 6 ells of English cloth for corporals, trumpeters and underofficers (AOSB I:1, s.383,386).

In theory, all Swedish and Finnish native troops sent to Germany in 1630 and 1631—infantry and cavalry—were issued with clothing, 5 ells of cloth per man (SKA III, p.154). As late as June 1632 Gustavus wrote home to make sure there would be enough cloth to kit out the 3,000 cavalry reinforcements he expected in spring 1633, 'so that they should not be esteemed of lesser worth than other nations, or be scorned by anyone for their poor and bad equipping'. Whereas there is solid evidence that most conscript infantry did indeed get uniforms, there is almost no trace at all of issues to the native cavalry. It may be that colonels obtained clothing for their men privately, but the details are unclear.

Some mercenary cavalry regiments did, however, get huge issues of cloth from state sources in lieu of pay. Hünecken's regiment in 1629 received nearly 3,000 Rdr. worth of 'Dusincken' cloth of unspecified colour; Baudissin's regiment in 1631 got nearly 5,000 Rdr. of the same. The 'life companies' of generals and dignitaries were also frequently kitted out in colourful and extravagant 'livery'-type uniforms.



Officers tended to prefer a more decorative hilt than the 'Swedish' sword. Some of these are now called 'Pappenheimers' after the greatest Imperialist cavalry general of the Thirty Years' War, Gottfried Heinrich von Pappenheim (1594–1632). (LRK 5775, 5787:26, 4311)

However, unlike Gustavus's infantry, sightings in the field of uniformed cavalry are extremely rare. If cavalry did receive uniforms they must have covered them or mixed them with non-uniform garments, or the uniforms must have been of an unremarkable colour like grey. One or two cavalry regiments were known by colour names—the Uppland Regiment, for example, was the 'Red Regiment of Horse' (see Plate D2); but this almost certainly referred only to flag colours.

Cloaks and capes

Some of the cloth issues noted above may have been intended for overcoats, capes, or cloaks, rather than jackets. Wallhausen stresses the need for waterproof cloaks in addition to riding jackets or buffcoats: '[The cavalryman] must without fail and for all [actions] have a cloak, under which he can put his weapons in rainy weather to cover and protect them.' The increasing popularity of the buffcoat only impressed the need for a cloak. The buffcoat may have been impervious to showers, but it was almost the exact opposite in heavy rain. 'When the buffcoat gets wet', wrote Wallhausen, 'it soaks up water like a sponge, and often will not dry out in two or three days', whereas cloth garments, 'you can have dry again in one or two hours.'

By 1635 even the impoverished Finnish cavalry had cloaks: the French ambassador's secretary Ogier recorded Finns, probably of Johan Printz's squadron which had just been sent from Finland, carrying cloaks on their horses' cruppers ('*pallium in postilena*').

Officers' clothing

A man on horseback inevitably saw himself as a cut above the ordinary footsoldier, and stressed this further by adopting the gentlemanly airs and fashions of a cavalier. Many Germans who volunteered for Gustavus's mercenary regiments, both officers and troopers, could afford to turn out in a buffcoat, sculpted doublet, and beaver hat with plume; but the impecunious Swedes and Finns had a great deal of catching up to do.

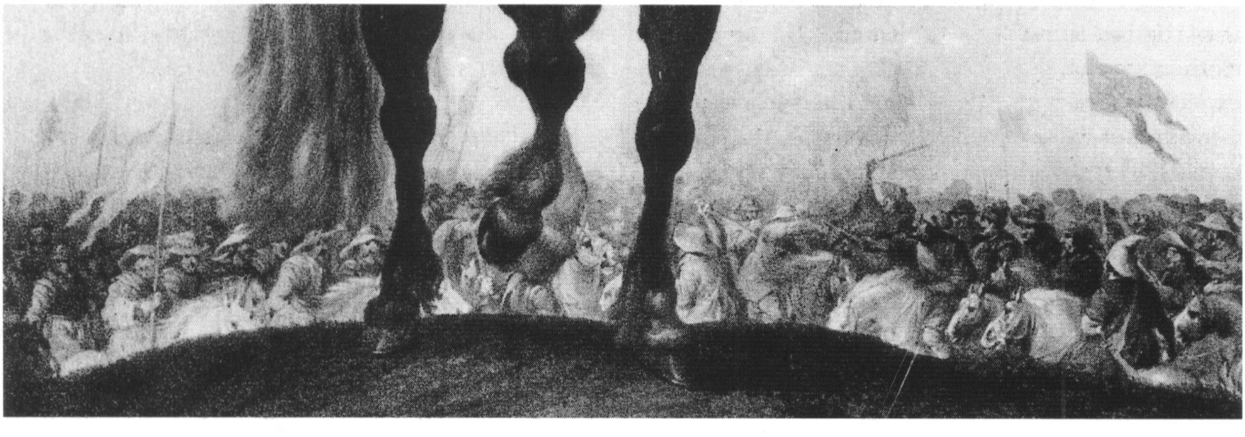
At Breitenfeld the Swedes' clothing, according even to the pro-Swedish eyewitness Dr Salvius, compared badly with the finery of the 'besilvered, gilded and plumedecked imperialists'. At the same battle, Monro implied that few Swedish officers even had plumes, in stark contrast to their ill-fated Saxon allies: 'The painted Souldiers the Saxons, with their plumed officers; which feathers served them I thinke in their flight, for tokens rather to cut them down by . . .'

The victory at Breitenfeld brought a degree of affluence to the Swedish cavalry in Germany, but officers fresh from home continued to be meanly attired. As Ogier noted of the same Finnish cavalry in 1635, 'I looked around where the officers might be, but those I saw on horseback I took as stable-boys, so shabbily and poorly were they dressed'.

DRAGOONS

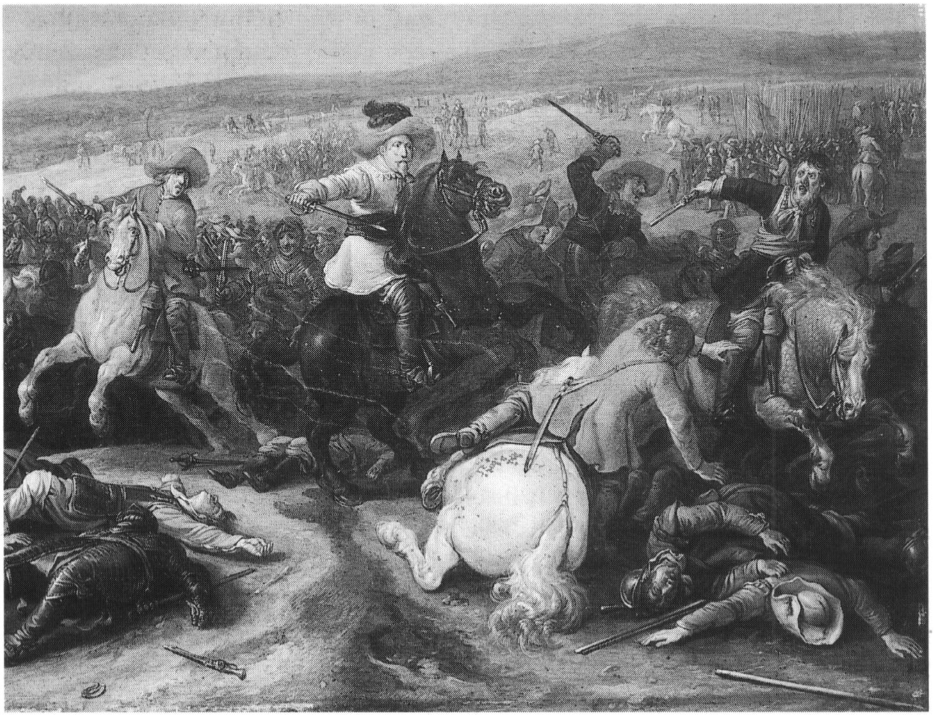
'*They took us for musketeers, seeing that no animal in the world is more like a musketeer than is a dragoon, and if a dragoon falls from his horse, he rises up a musketeer.*'

Dragoons were little more than infantry on horseback, as is clear in this passage from Grimmelshausen's *Simplicissimus*, a partly autobiographical novel set during the Thirty Years' War and published in the 1660s. Gustavus's dragoons were no different: 'The Dragooners ride like Horse-men: but



The foreground of Hillegaert's 1634 portrait of Gustavus shows a cavalry action between Swedes (right) and Imperialists (left). The Swedish cavalry wear cloth jackets instead of the buffcoats of the Imperialists, and felt hats instead of helmets.

Gustavus in action, probably at Lützen—shown correctly this time without armour. Behind him is a figure wearing a cloth jacket and a hat cocked at the front, perhaps a native light horseman. The jacket has no shoulder rolls, no collar and few buttons; the falling rider in the foreground gives a useful rear view of a similar jacket and shows the split skirts. The rider on the extreme right already wears a neckerchief rather than a lace collar at this early date; this was to develop later into the cravat. Oil painting by the Dutchman Jan Martszen de Jonge, dated 1634. (Stockholms Slott)



they fight on foot', wrote Watts in the Swedish Intelligencer.

The dragoon as a troop type is generally thought to have originated in the late 16th century in France; but appears first in Sweden in the 1610s. The earliest Swedish dragoons were mercenaries commanded by Frenchmen and Italians such as De la Barre, De la Chapelle, and Carnissini. Some of these units had Frenchmen in the ranks—clearly the French had some expertise in this field. During the entire Polish campaign the Swedes had no more than a half dozen companies of dragoons, and only a single company accompanied Gustavus during his first few months in Germany—under a Captain Daniel de St. André, who in fact appears as a character in Grimmelshausen's novel.

Gustavus's first dragoon regiment—Taupadel's—was formed only at the very end of 1630, when several of the old free-companies were combined into a squadron and recruited up to regimental strength. Further regiments were raised shortly afterwards (see Table C). Taupadel's regiment, however, was the only sizeable dragoon unit that accompanied Gustavus for a large part of his campaigns. At its maximum strength in April 1632 it numbered 1,200 men in 12 companies, but usually was consider-

Table C: Principal dragoon units

1621 Guillaume de la Barre (3 coys.) –25 etc?
1630 Georg Christof Taupadel (4–12 coys.) –34 etc?
1630 Lars Kagg (8 coys.) –35 etc?
1631 Daniel Dumeny (8 coys.) –33 etc?
1631 Antoni Monier (4 coys.) –35 etc?
1631 Georg Christoffer Rosen (4–12 coys.) (1632–33 'Baudissin's Leibregiment') –34 etc?
1631 Erik Hansson Ulfsparre (4 coys.) –33 etc?
1631 Pierre Duverge (4–6 coys.) –34 etc?
1632 Jakob Duwall (8 coys.) –33d?
1633? Gustav Horn (3–6 coys.) –34d?

Dragoons were organised exactly like the infantry in companies of 150 men. Some companies acted independently but most were grouped into squadrons or regiments of wildly varying size. However, these squadrons and regiments were often broken up again, making unit histories almost impossibly difficult to follow.

ably smaller. Taupadel—whose name was often corrupted to 'Dubatell'—achieved such a reputation that when he was captured in 1632 it was said that Wallenstein freed him without ransom in a high-spirited gesture, claiming that Gustavus would be quite unable to continue the campaign without him.

Whatever Taupadel's personal skills, dragoons had indeed become vital to the effective conduct of a campaign thanks to their willingness to dismount to do the tiresome everyday chores disdained by their snobbish colleagues in the cavalry. Dragoons were usually to be found in the vanguard, pathfinding and clearing roads, securing bridges, and generally lubricating the motion of the army. In a sense, dragoons were labourers on horseback. They were too busy elsewhere to fight in the formal battles of Breitenfeld and Lützen.

Weapons and uniforms

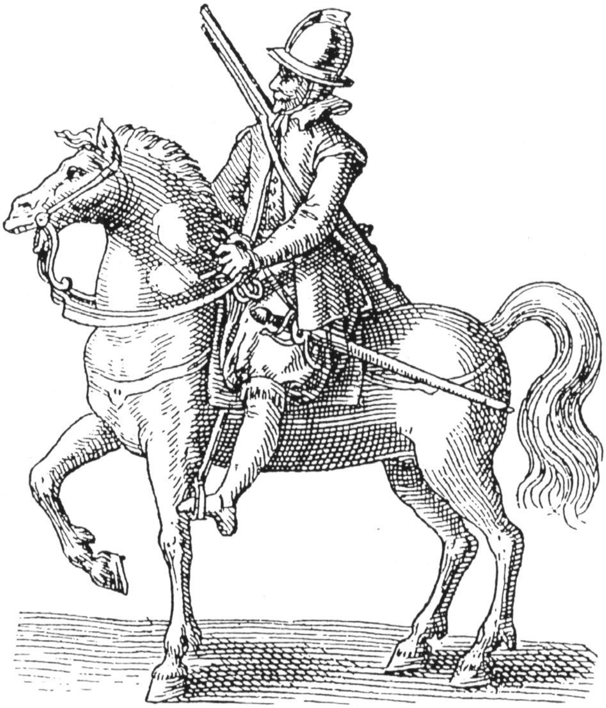
Wallhausen, and later authors who copied from him, wrote that since dragoons were merely mounted infantry they should be armed with half-pikes in the same proportions as for infantry. There is, however, not a single piece of evidence that Swedish dragoons ever carried pikes, and with the sort of duties expected of them, pikes would only have been a hindrance; it is fairly certain that Swedish dragoons consisted only of musketeers.

The dragoon's musket was normally a matchlock weapon, and differed little from that of the infantry, except that it was lighter and did not normally need a rest. However, the need for constantly lit match cords proved inconvenient for off-battlefield duties, and from about 1635 the Stockholm Arsenal began supplying dragoon units with a small proportion of snaphaunce muskets (proto-flintlocks).

There are several documented examples of clothing issues to dragoon units: Taupadel's squadron in 1631 (AOSB I:6, p.83); Monier's squadron in 1632 (SKA III, p.218); and Duverge's regiment in late 1633 (MR 1633/41). The quantities of cloth were comparable with the infantry, suggesting uniform garments of similar cut. Colour was specified only once, in an issue to Arvid Svensson's mercenary dragoon company in late 1635. They were given 'old black' *piuk* cloth for uniforms and stockings—material that had been covering the walls and ceilings of the widowed queen's apartments since Gustavus's death, and had been taken down in March 1635 and placed at the disposal of the Royal Wardrobe (WardAccs 1635, item 110 & Kjellberg, p.99).

Mounted jägers

One of Gustavus's more exotic units was a company of jägers, called in the Swedish sources *Djurskyttar*—gameshooters. They are one of the first jäger units ever recorded. They were on the military establishment as early as 1611, and served in Polish Prussia in 1627. Before the German campaign in 1630 Captain Nils Krak was commissioned to recruit foresters and gamewardens for the company from the Royal estates in southern Sweden; and to make sure each man provided himself with a horse (SKA I, No.20).



A pre-Thirty Years' War dragoon armed with a matchlock musket slung over his shoulder, holding a length of smouldering match cord in his rein hand. He is dressed as an infantryman with a cloth coat, and shoes rather than boots. Two of Gustavus's alleged innovations are already apparent on this figure: the musket has no rest; and the 'bandolier' of powder flasks has vanished. Bandoliers are shown on other pictures of dragoons but they may have proved inconvenient for mounted use, as the cords would tangle with the motion of the horse. From Wallhausen's **Kriegskunst zu Pferd** ***(Frankfurt-am-Main, 1616).***

Beyond the fact that Krak's gamekeepers were part of Gustavus's personal retinue in Germany, little is known of their activities. They certainly saw some action: 48 of them sailed for Germany in July 1630; they numbered 37 in February 1632; and only 24 in June 1633, shortly before being shipped home. A further 300 mounted jägers in three companies were raised in 1631 by Hessen-Kassel, Sweden's closest ally in the war.

ARTILLERY

'Your guns with horse and waggon you tarry,
Ours one can on the shoulder carry,
From strong leather them we make,
and when they shoot the earth quakes.'

('Conversation between a Lapp and an Imperialist' in a German news-sheet of 1630/31)

When it comes to Gustavus's artillery, his mysterious 'leather cannon' always steal the scene. Their story is but a short chapter in the progress towards something far more important: the mobile metal field cannon. This does not mean that something as peculiar as the leather cannon can just be passed over, however.

Leather cannon

It may be a heinous crime to suggest that the leather cannon was not a Swedish invention. Even at the time it was linked inseparably with the Swedes: 'What, you strumbling [*strömming* = herring] eaters, have you eaten up all your leather guns for hunger?', called out one Catholic soldier during a siege in 1631, puzzled by the absence of the Swedes' famous cannon. In fact the leather cannon first saw the light of day not in Sweden, but in Switzerland.

A mathematician, Master Philip Eberhard, received a licence to design leather cannon in Zürich in 1622, and tested his first working model there in 1623. An Austrian baron, Melchior Wurmprandt, learned Eberhard's secrets, and took them with him to Sweden. On 15 July 1625 in Stockholm he tested the first Swedish leather cannon.

In the introduction to his *Kriegsbüchlein* of 1644 Lavater, another Züricher, tried to reclaim the invention for the Swiss:

'The art of guns of leather,
Did not from Sweden come,
I say it on this ground:
It was with our people long ago,
And by our people found.'

Two other inventors—a German, Ludwig Ripp, and a Scotsman, Robert Scott—also test-shot their own versions of leather cannon in Stockholm in 1628, but neither of their prototypes were taken up, since Wurmprandt's pattern had already been put into mass production.

The ever-inquisitive Prussian official Israel Hoppe watched wide-eyed when the first 14 leather guns—'much talked about, but little believed'—were off-loaded in Polish Prussia on 9 October 1627. Of these, Wurmprandt took two 6-pounders and four 3-pounders to their first action on 13 October at the siege of Wormditt.

Despite initial successes (see Plate A), the leather cannon did not prove to be a viable weapon. In a letter dated 23 December (1628 or '29) Gustavus wrote abruptly: 'Wurmprandt's work at [his gun-foundry at] Ulfvesund is of no use to us or the Realm, therefore it is our gracious desire that his work ceases . . .'. Their last recorded use was in the furious cavalry battle at Honigfelde in June 1629, where ten were lost to the Poles. No leather guns were taken to Germany in 1630; most remained in Polish Prussia and were returned to the Stockholm arsenal, where 30 of them were listed in inventories in the 1640s.

Regimental cannon

The leather cannon was superseded in 1629 by a weapon that did not have the same tendency to overheat and burst—the so called 'regimental' cannon. The barrel of this weapon was made of bronze—an alloy of copper with tin—called at the time simply 'metal'. By using a reduced powder charge it was possible to lighten the barrel considerably, and it was further shortened to save weight. It was bored to shoot an iron ball of between three and four pounds weight, and so has been known by both these terms; correctly speaking though, it was a '3-pounder'.

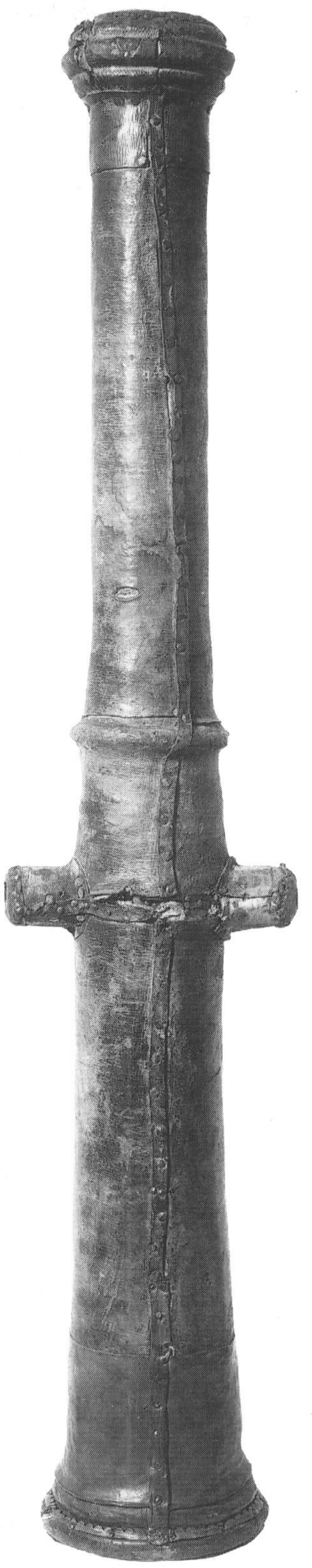
It is still not known for certain who designed the first regimental gun. The engineer Schildknecht said that it was a German Protestant. A German, von Siegroth, is linked so often with Swedish regimental guns that he may have been the inventor. There were in fact two von Siegroths, Hans Heinrich (died in the 1620s) and his son David Friedrich (died 1647). Both came over to Swedish service from Hessen-Kassel in the 1620s. The first Swedish bronze regimental guns appeared in 1629, when 'Siegroth' pieces were produced and test-shot in Stockholm on 5 May. By the end of the year 50 had been manufactured. Further production in Germany for the Swedes had begun by 1632.

At Breitenfeld 42 regimental guns were available, so they were handed out six per brigade (three to each 'wing' squadron of the brigade). Montecuccoli noted that each gun required two crew: 'one is appointed to load and fire, the other conducts it by the end of the carriage, and brings it forwards at the march tempo of the infantry.'

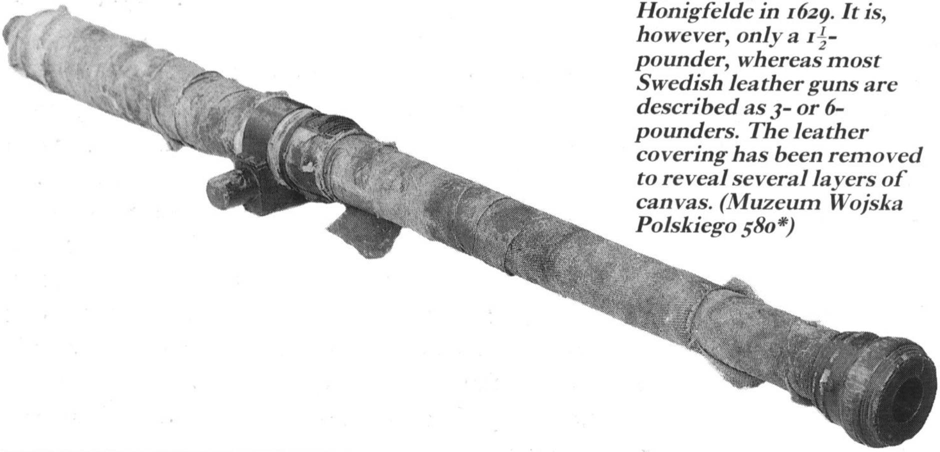
Heavier artillery

Early artillery pieces had a bewildering variety of names—sakers, culverins, falconets, and many others—disguising an even more confusing system of calibres. It has been said that Gustavus was the first to bring order out of this near chaos. The process actually began a good deal earlier: Charles V (Emperor of the German nation, 1520–1555) reduced the calibres to seven, though his reform was not adopted everywhere. The key date was, however, 1609, when the Spanish, largely on the advice of Diego Uffano, reduced the number to only four: 48-, 24-, 12- and 6-pounders. 'It is truly remarkable to have reduced all our guns to these four calibres', wrote Uffano in his 1613 manual.

Cannon became known in terms of fractions of



The only 'leather cannon' in a Swedish collection. This underside view shows where the leather covering was glued and nailed together. The barrel itself was made of a thin copper tube bound with wire, cord and canvas. This is the prototype made by Ludwig Ripp which was test-shot in Stockholm in January 1628, but never went into production. It was preserved by Chancellor Oxenstierna's descendants at Tidö, and is now at the Livrustkammaren in Stockholm. (LRK 3169)



The leather cannon was widely copied in all corners of Europe, and a great many survive, though few are Swedish. Scottish collections alone contain over 20, mostly made in the late 1630s and early '40s by James Wemyss, a nephew of another famous leather-gun maker, Robert Scott. This example, below, from Warsaw is more likely to be Swedish than most, and could be one of the ten captured by the Poles at Honigfelde in 1629. It is, however, only a $1\frac{1}{2}$-pounder, whereas most Swedish leather guns are described as 3- or 6-pounders. The leather covering has been removed to reveal several layers of canvas. (Muzeum Wojska Polskiego 580)*

Table D: Protestant forces in Germany, early Nov 1632

Swedes	8,000 (5.5%)
Finns	3,000 (2%)
German Mercenaries:	
Old regiments(1)	15,000 (10.5%)
New regiments	65,000 (44.5%)
British mercenaries(2)	7,000 (5%)
Allies:	
Saxony	17,000 (11.5%)
Brandenburg	6,000 (4%)
Hessen-Kassel	6,000 (4%)
Mecklenburg	4,000 (2.5%)
City Militias	c.15,000 (10.5%)
Total(3)	146,000 (100%)

Notes:

(1) Regiments for which recruiting had begun before Gustavus arrived in Germany in July 1630.

(2) If only infantry are counted, there were more British in Germany at this time than Swedes.

(3) Figures all based on a regiment by regiment analysis compiled *Sveriges Krig*, vol. 6 and many other sources.

It has often been said that Gustavus permanently increased the size of armies. This is not strictly correct. Gustavus's army was not so much a 'Swedish army' as an allied army formed with the contingents of the Protestant princes of Germany. About half of the 150,000-odd men were in garrisons, the rest were divided into field armies of between 3,000 and 20,000 men, which were sometimes combined for short periods if battle seemed likely. Gustavus's own 'field army' was therefore no larger than those of his contemporaries.

the 48-pounder or 'full cannon': the 24-pounder became the 'demi-cannon', the 12-pounder the 'quarter-cannon', and the 6-pounder the 'eighth-cannon'. This Spanish system was quickly adopted in France and Holland, and the Swedes soon followed suit.

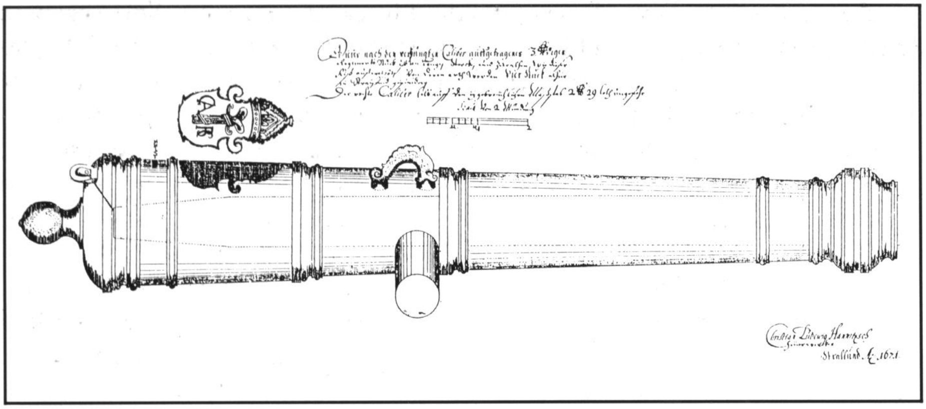
Gustavus went even further: he did not bother to manufacture the 48-pounder, since the 24-pounder was almost as good at smashing masonry and at far less cost; and he replaced the 6-pounder with the 3-pounder regimental gun (also called a 'sixteenth-cannon'). His artillery was thus reduced to only three calibres: 24-, 12-, and 3-pounders. Gustavus deployed 12 heavy cannon at Breitenfeld—positioned initially in threes in front of the centre squadron of each front line brigade.

The artillery train

The Swedish artillery was organised in 1630 into a regiment-like structure of six companies, though it was never actually called the artillery 'regiment' as is sometimes claimed. One company contained the regimental pieces, three the heavier guns, one the 'fireworkers', and one the miners for siege work. In October 1632 the artillery staff of Gustavus's main field army alone was estimated at 1,200 men.

Horses and waggons were a permanent part of a central artillery stable, and did not tend to be hired on a casual basis from civilians as is sometimes thought. Drivers (*kuskar*) for the regimental guns, one per gun, were already in 1630 on the company strength, though they were transferred later the same year to the main pool of drivers (nearly 600 strong in 1630).

Each regimental cannon was crewed by a gunner (*konstapel*) and an assistant (*hantlangare*); larger pieces had a gunner with two assistants, plus one *styckjunckare* (an NCO) shared between two guns. 'Commanded musketeers' were borrowed from the infantry when extra muscle-power was needed. Though the senior ranks and technical experts were often foreigners, the ordinary crewmen were mostly Swedes: thus the artillery remained until the end of the Thirty Years' War, the most Swedish of the arms of service.



The 3-pounder bronze regimental gun appeared for the first time in Sweden in 1629, and completely replaced the leather cannon before Gustavus set foot in Germany in 1630. A shortened barrel reduced the weight to only 138 kg, which made it light enough to operate alongside the infantry. Note Gustavus's cypher and the 'wheatsheaf' emblem of the Vasa family on this drawing made in 1671. (After Jakobsson)

IDENTIFICATION SIGNS

The silk sash or scarf is generally seen as the main way that armies told each other apart in the Thirty Years' War. It was, however, an expensive item; and as many military writers of the period noted, it was reserved primarily for officers and horsemen. The infantry, and in Gustavus's impoverished army probably the cavalry too, had to make do with cheaper alternatives.

Fieldwords and fieldsigns

The simplest was the 'field word'—a password, usually a religious phrase— made known to the soldiers on a day when action seemed likely. In practice the same phrases were chosen again and again. The Swedes, in sturdy Lutheran manner, called for God or Jesus: '*Gott mitt uns!*' was used in virtually all the big battles of the 1630s; '*Hilf Herr Jesus!*' became more popular in the 1640s.

More important was the 'field token' or 'field sign'—usually a cheap or improvised item. At Breitenfeld, the Swedes used 'greene branches in their hats or helmets' according to the Swedish Intelligencer, so that 'ere night their browes were crowned as if with victorious Lawrell'. From the late 1630s twisted bands of straw worn on the hat and/or left arm became the undisputed trademark of the Swedish soldier (see Table E). One Swede wrote, in about 1700, that the straw fieldsign had been used since Gustavus first introduced it at the storming of Riga in 1621. This has not yet been confirmed in contemporary sources, and smacks of legend; but with Gustavus's family badge being the 'wheatsheaf', the symbolic origin at least seems fairly clear.

Scarf colours

Received wisdom has it that the Imperialists wore red scarves and the Swedes blue. Though there is good evidence for Imperialist red in use by Wallenstein's army from 1632, Gustavus's blue is far less solid. In fact, not a single written reference has yet been discovered: no regulations, and no reported sightings on the battlefield.

The idea seems to be based on battle-paintings and portraits, which are, however, not always reliable. Battle-painters were mostly Dutch and Flemish, and they worked in their home countries well away from the theatre of war, and often decades after the events they depicted. Gustavus's portraits are questionable, since most were simply copied from prints, with colours added from the artist's imagination.

Reliable officers' portraits suggest that blue scarves were not the norm during Gustavus's lifetime. The 20 portraits at Skokloster, dated 1623–1626, show a wide variety of scarf colours. The 1626 Duwall portrait (see MAA 235, pp.36 & 37) shows four captains of the Norrland regiment with orange scarves and four with grey-green ones. In the 1630s scarves disappear altogether from Swedish officer portraits; their absence is so complete that it suggests that the lack of a scarf may have been a 'field sign' in itself.

Only in portraits from the very end of the Thirty Years' War—long after Gustavus was dead—do blue scarves appear consistently. Only in 1645 is there written confirmation of a sort—the Swedes at Jankow used 'blue signs in the standards'—probably strips of cloth tied at the lance tops, like cravats.

As for the idea that Swedish blue scarves had gold fringes—equivalent in heraldry to yellow—to reflect the colours of the Swedish flag, this is unlikely: almost all the best quality scarves, no matter what their colour, had gold fringes. One German satirical print mentions that 'a pretty scarf with gold borders' was every greedy Thirty Years' War officer's greatest desire.

In this search for blue scarves, we may in any case be barking up the wrong tree. Military writers, from Melzo in Antwerp in 1611 through to John Vernon in England in 1644, noted that 'every horseman must weare a scarfe of his Generalls Colours'. The scarf colour was the mark of the army commander; it was only beginning to develop into the mark of a nation.

But did Gustavus have his own general's colour? The most likely choices are black and yellow—his livery colours. Of the scarves made for Gustavus between 1619 and 1627 (records have not yet been found after 1627), one was silver, one white, one brown, and three black. In 1631 the Yellow Regiment of Foot were issued 80 ells (48 metres) of black Naples taffeta, and Baudissin's Horse Regiment 20 ells of the same—for officers' clothing, but not specifically for scarves. There is, however, not a hint of black scarves in other sources. Yellow scarves are worn by the Swedes in several Flemish battle-paintings, but their use is also not otherwise confirmed.

The German historian Hoyer wrote in 1797, without quoting his source, that the Swedish colour was in fact green. Though this has been dismissed by modern historians, there is actually more evidence for green as Gustavus's colour than any other. A painting dated 1632 of Breitenfeld, by the Frenchman Jean Walter, shows green scarves. At Wittstock in 1636, according to one French news-sheet, the Swedes wore 'small green scarves' around their arms as their fieldsign. It is also possible that the greenery worn in the headgear at Breitenfeld was another example of Swedish green—especially since Gualdo Priorato records that Gustavus wore a 'little green feather' in his hat in that battle (see Plates C & G).

Perhaps the Swedes used all these colours in

Table E: Swedish Fieldsigns and Fieldwords

Battle	*Fieldsign*	*Fieldword*	*Source*
Breitenfeld 1631	Green sprigs in headgear	Gott mit uns!	Intelligencer, Monro, etc.
Lutzen 1632	Any colour but red?	Gott mit uns!	Intelligencer, etc.
Nördlingen 1634	Unknown	Immanuel Gott mit uns!	O. Fraas (1869)
Wittstock 1636	Small green scarf on arm	Gott mit uns!	French news-sheet
Storm of Leipzig 1637	Straw on arm	Unknown	Khevenhüller
Capture of Bautzen 1639	Straw band on left arm	Unknown	German news-sheet
Breitenfeld II, 1642	Straw on arm and hat	Hilf Herr Jesu!	Chemnitz
Jankow 1645	Blue signs on standards	Hilf Jesus!	Slaget vid Jankow, p.148
Warsaw 1656 (against Poles)	Straw on arm and hat	Hjälp oss Jesus! (or Gud med oss!)	J. Carlbom (1906)
Lund 1676 (against Danes)	Straw	Hjälp Gudh!	Dahlberg's battle plans
Landskrona 1677 (against Danes)	Straw	Hjälp Jesus!	Dahlberg's battle plans

turn? In July 1562 and July 1564, King Erik XIV had first ordered that the Swedish army's scarves should by 'yellow, since the cross that divides our Arms, is also yellow'; but then in September 1564 he gave the order to use red ones; in August 1565, green ones; and in January 1568, red ones again (R. Mejborg, Antiqvarisk Tidskrift for Sverige 9:3, p.33).

It may be that blue, black, yellow and green were all the Swedish colour for a time; it may be that each allied German prince and Swedish general used his own personal colours for his own troops; it may be that there was a complete free-for-all, and everyone wore whatever colour he pleased. The subject clearly still needs more research. The most coherent thing that can be said at present is that from 1632 to about 1635 the Swedes avoided red scarves because that was the acknowledged Imperialist colour. If they did adopt a single colour it was probably not on a scarf, but rather on a strip of cloth, worn on the hat or arm.

Waggon tilt colours

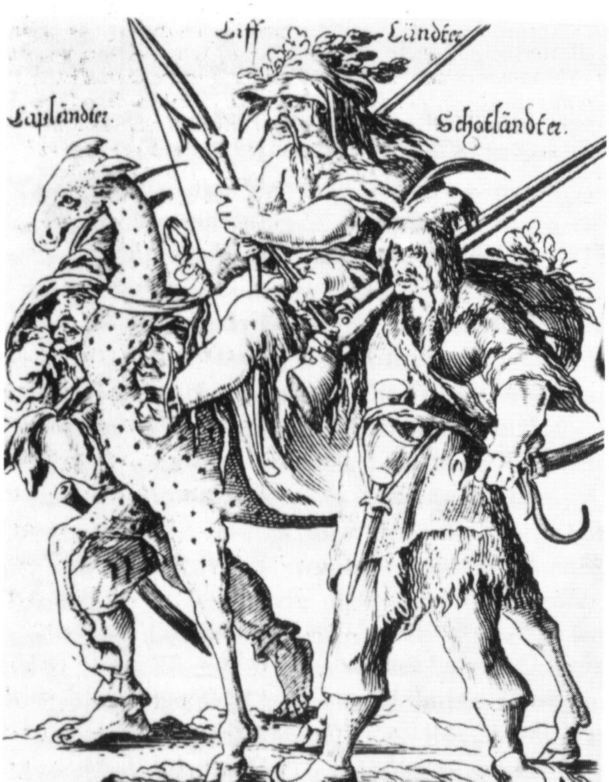
A final clue comes in the colours of the tilts of the artillery's ammunition waggons. These were made from the same woollen cloth used for uniforms, and were issued by the state. In 1630 the basic colour was blue with 20% yellow: judging from contemporary prints this was probably cut as a yellow St. Andrew's cross on a blue background—similar to, but not exactly like the Swedish flag. In 1631 the pattern changed to all yellow; four years later the chronicler Hoppe watched '15 yellow ammunition waggons' draw out of Elbing, the Swedish HQ in Polish Prussia. In the same year (1635) tilts reverted to all blue, and appear to have remained that colour until the end of the war (WardAccs 1629, item 319; 1631, item 74; and 1635, item 18).

TACTICS

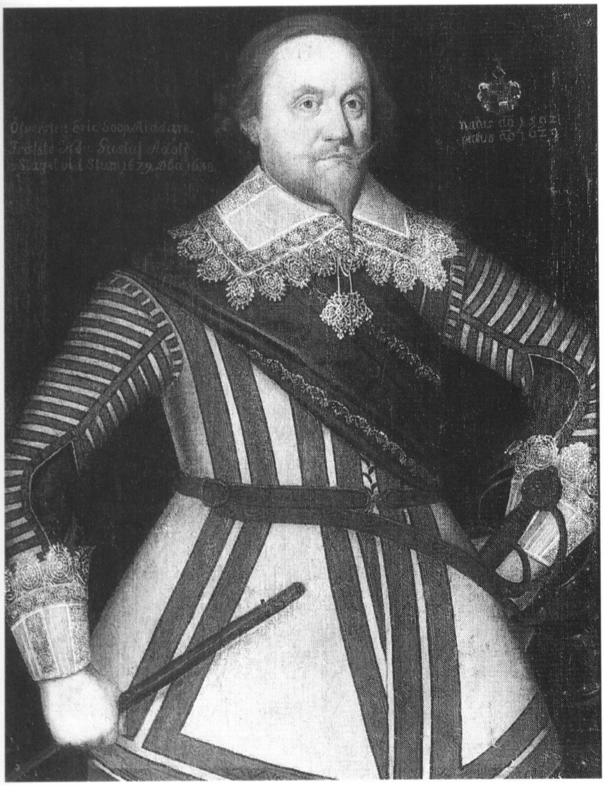
Gustavus had many influences on the art of war; but one that stands out above the rest is his understanding of the use of firepower. He was perhaps the first general to see that gunpowder weapons were now the single most decisive element on the battlefield.

The devastating firepower of Gustavus's infantry and artillery is fairly well known. His infantry used the 'salvo'—the discharge of an entire unit's muskets in one or two volleys to produce a terrifying wall of lead. The artillery—especially the regimental artillery—gave close support to the infantry by firing canister at point blank range prior to contact. Lt.Col. Henry Muschamp's description of Lumsdaine's (ex-Spens's) Scots at Breitenfeld gives an excellent idea of how the combination worked:

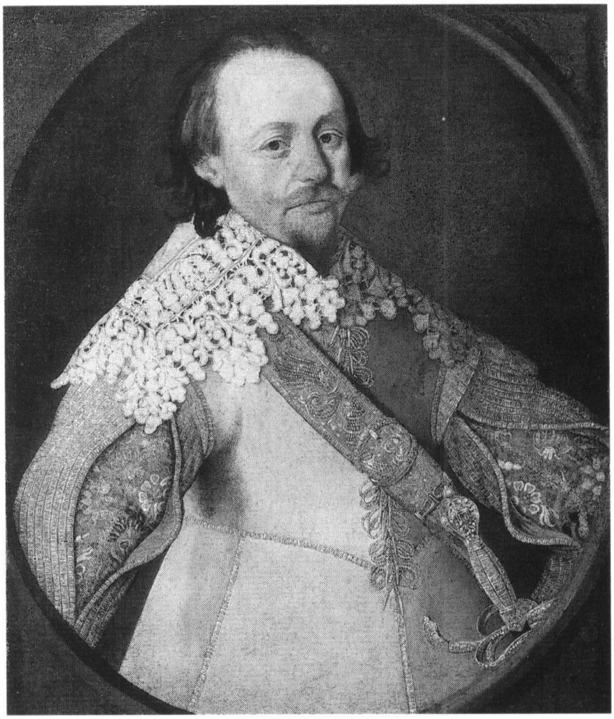
'First giving fire unto three little field-pieces that I had before me, I suffered not my musketeers to give their volleys, till I came within pistol-shot of the enemy; at which time I gave the order to the three first ranks to discharge at once; and after them the other three: which done we fell pell-mell into their ranks, knocking them


Liff
Länder
Lapländer.
Schotländer.
Abbildung der wunderſeltzamen Völcker ſo ſich under der Schwödischen Armada befinden

'Illustration of the strange and bizarre peoples that are to be found with the Swedish army'. This Lapp, Livonian (Latvian) and Scot are clearly fantasies dreamed up by a German illustrator. The 'Schotländer' does, however, have Irish headgear, and what looks like a dirk carried at the front in the correct manner. The sprays of leaves worn in the hat of the Livonian and on the snapsack of the Scot are probably a reference to the Swedish 'fieldsign' used at the battle of Breitenfeld in 1631. Note that the 'Lapp' appears to be eating his fieldsign . . . (Anonymous German broadsheet c.1631)



Erik Soop (1592–1632), colonel of the Västgöta cavalry, in a portrait dated 1629. He wears a buffcoat with the broad decorative bands favoured in the 1620s, and carries a cane as his symbol of command. The Västgöta cavalry had been issued in 1628 with green standards, so it is perhaps more than a coincidence that his scarf (sash) is a green-blue colour. In general the Swedes do not seem to have used a single scarf colour in the 1620s. (Gripsholm 931)



Colonel Erik Soop, in a second portrait probably painted posthumously and attributed to the court painter Cornelius Arendtz. Fashion has changed considerably in these few years. Plain buffcoats are now the norm, edged here with far more discrete gold thread borders. The front is now laced up in a series of falling bows, each ending in ornamental metal 'points'. The ornate lace neck band has grown to ridiculous proportions, prior to its replacement in the 1640s by the simple and functional cravat. The heavily embroidered baldric and sleeves are now the main symbols of rank. As in most 1630s Swedish officer portraits, Soop does not wear a sash. (Private Swedish collection, photo SPA)

down with the stock of the musket and our swords.' (Swedish Discipline 3, p.24)

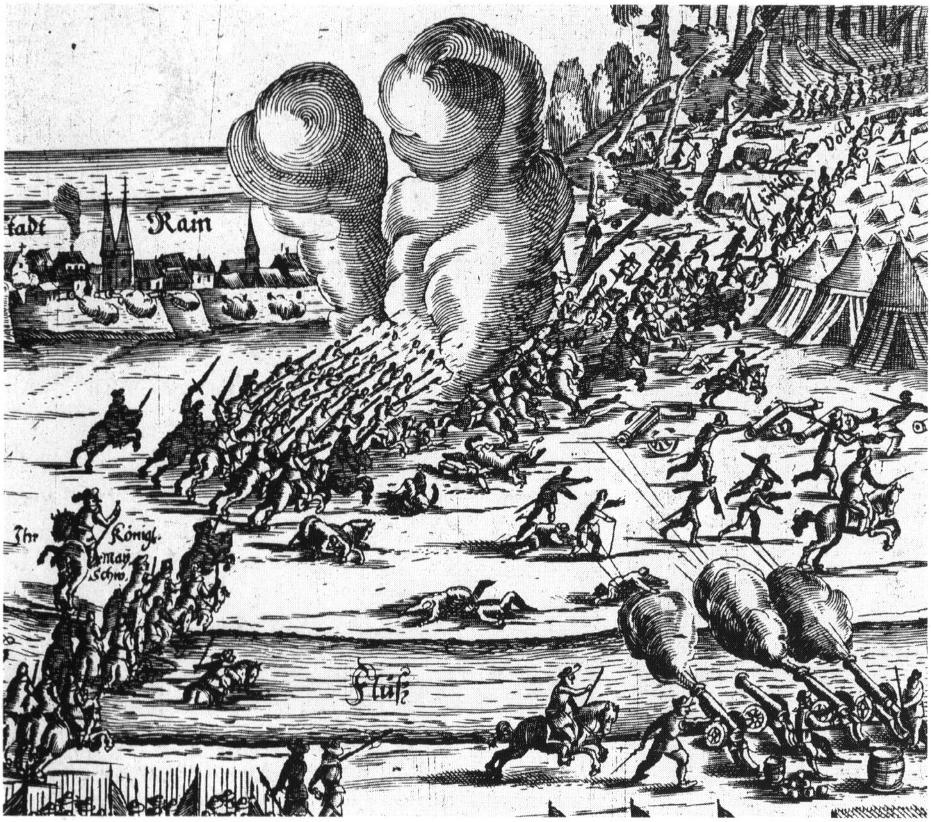
As for improvements in the firepower of cavalry, at first the exact opposite seems to be the case. Gustavus minimised the use of firepower by ordering them to charge into contact.

The 'Abolition' of the Caracole

Chemnitz describes Gustavus's instruction to his cavalry in some detail: '*Only the first or at most the first two ranks, when near enough to see the whites of the enemy's eyes, were to give fire, then to reach for their swords; the last rank however was to attack without shooting but with swords drawn, and to keep both pistols (or in the front ranks, one) in reserve for the mêlée.*'

This, according to most modern authorities, was Gustavus's key tactical reform. It amounted, they say, to abolition of the 'caracole' (literally 'snail')—the convoluted and ineffective skirmishing by which each rank shot off its pistols and then retired to expose a fresh rank which did the same. The wild, unrestrained charge of Gustavus cavalry—copied from the ferocious Polish 'winged' lancers—is said to have carried all the German cavalry before it, and introduced to the West a new period of true cavalry warfare. Though there is an element of truth in all this, in fact, by 1630 the Germans do not seem to have been nearly as addicted to the caracole as is usually claimed.

Monro describes Tilly's cuirassiers at Breiten-



The victory at Rain or 'Crossing of the Lech' in April 1632, which was won with Gustavus's artillery alone. Gustavus shot Tilly's army to pieces with his eighteen 24-pounders and 54 lighter guns, before crossing the River Lech to finish them off. Note Tilly's wrecked guns, which show that counter-battery fire was already a well established tactic. (UUB)

feld 'charging furiously' at the Swedish horse. At Lützen, the Imperialist Colonel Piccolomini bragged that his cuirassier regiment had 'charged eight times in succession'. During one of these charges Sydenham Poyntz (himself an Imperial cuirassier) records how Piccolomini 'made a wonderful breach through the king's Finlanders'.

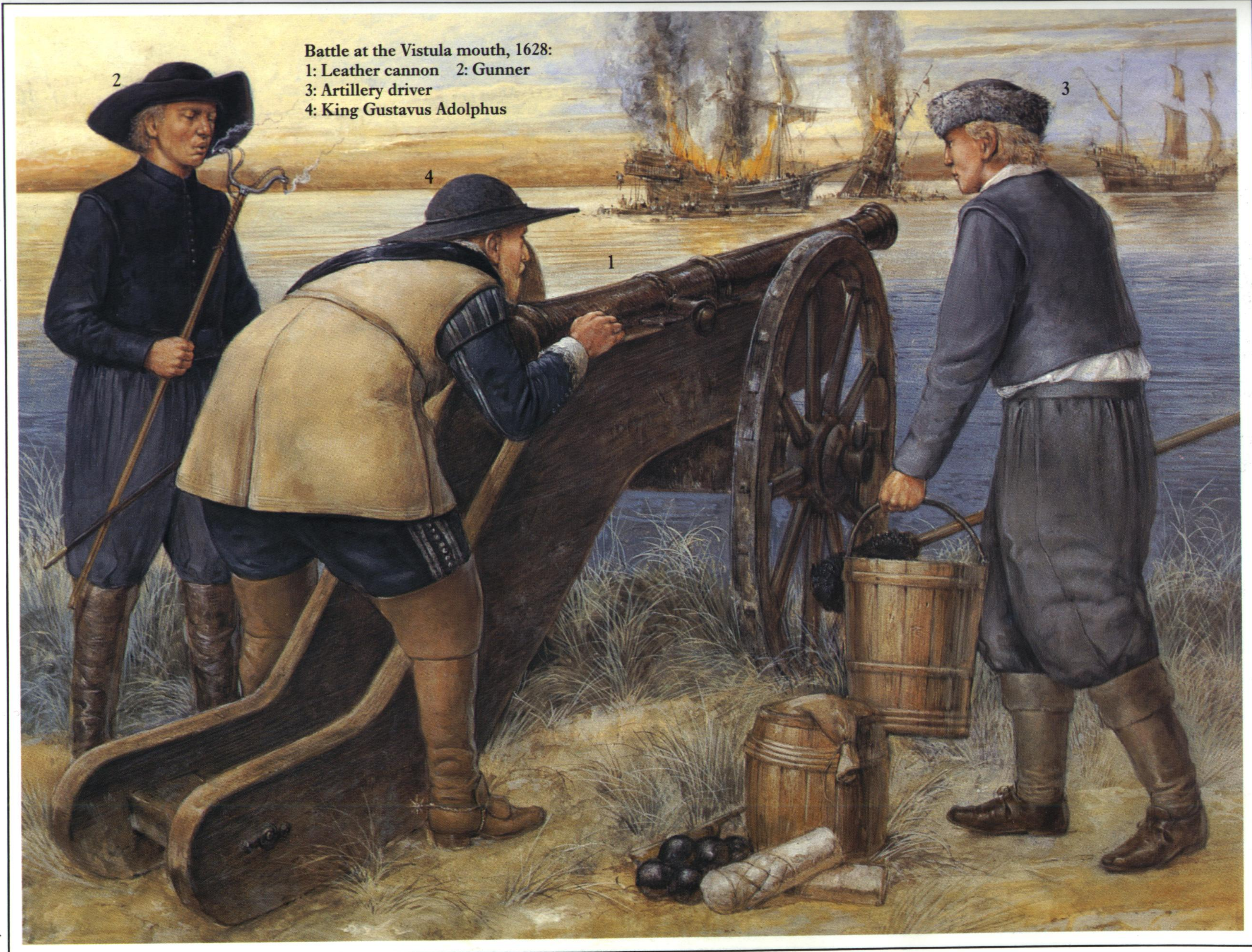
Far from being designed purely for the caracole, the pistol-armed cuirassier was the most powerful attack force on the Thirty Years' War battlefield. Big men on big horses, they formed up in dense blocks knee-to-knee, usually six to 12 deep. When they attacked they paused only for the front rank or two to fire their pistols, just enough to cause some disorder in the enemy ranks, and then the dense mass crashed its way clean through anything that stood in its way.

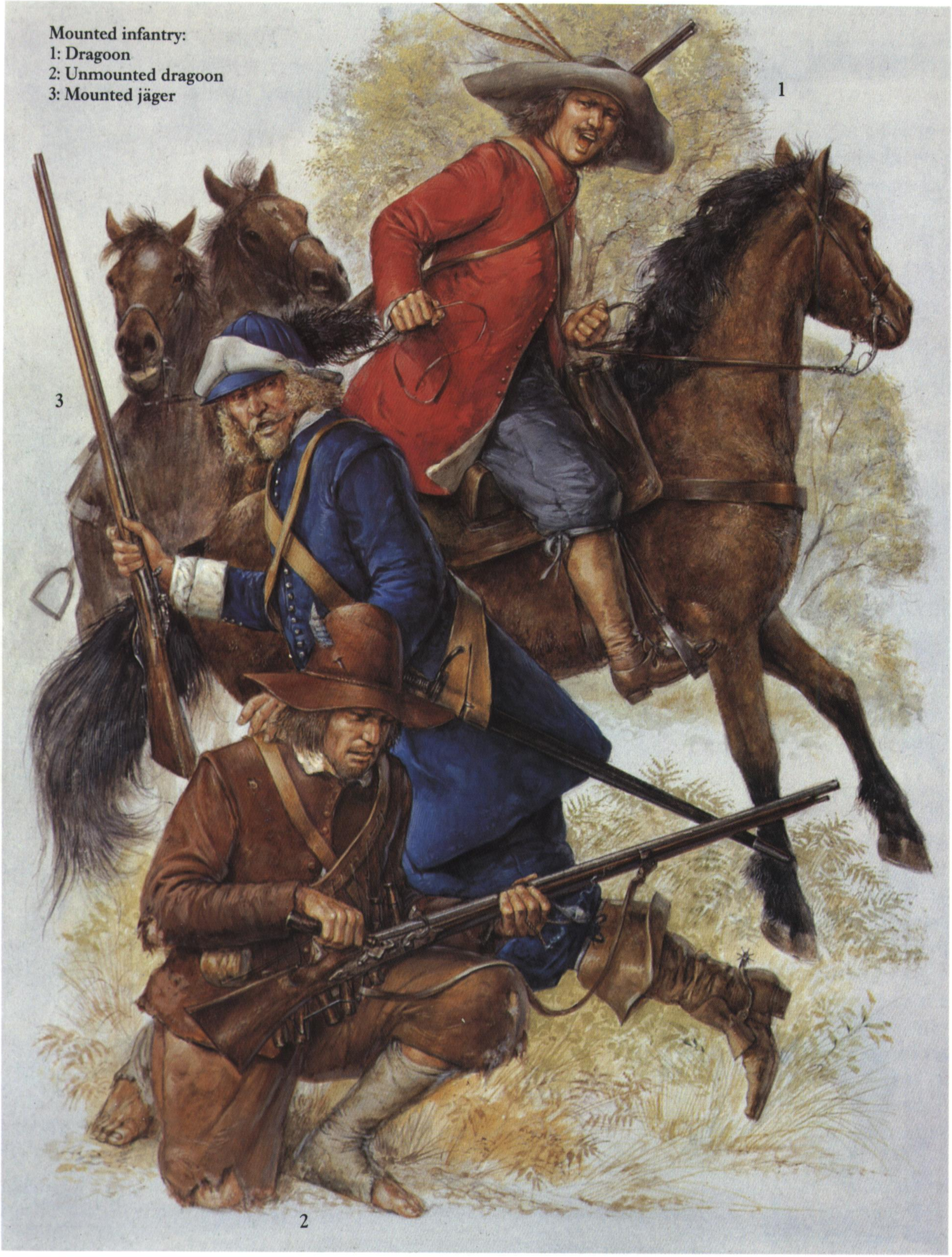
That, at least, was the theory, and the practice followed by better units like Piccolomini's. The problem was that many German mercenaries, who had a valuable horse and promising career at stake, were not prepared to risk the shock of contact. Instead they simply shot off their pistols in the direction of the foe, and then, considering their duty done, veered off to the rear to let the next rank take the risk. Charges were often degenerating into caracoles.

Hoppe wrote that in September 1628 Baudissin's recently arrived regiment had 'little lust (as is the current German fashion) to fight'. It was Gustavus who remedied this ailment, by strictly enforcing the charge. In this he was indeed to an extent copying the Poles, who had fewer firearms and were keener to get into contact. He may also have been influenced by shortages of pistols among his own cavalry. But this really was as far as Gustavus's great innovation went—it was not a particularly radical move.

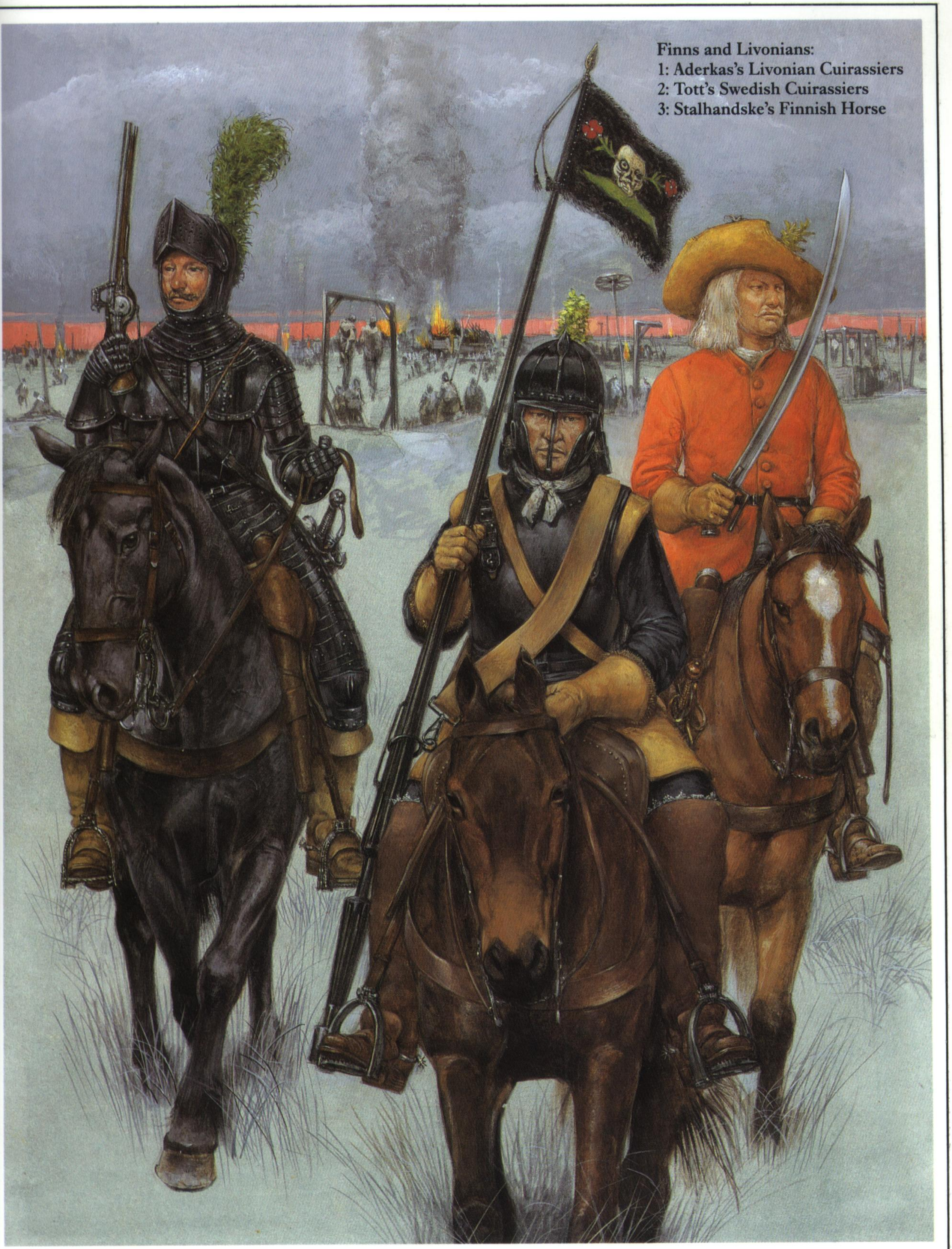
The 'caracole' was almost as out-of-date as the *tercio* (which, despite some modern historians, was not used at Lützen or at Breitenfeld). By the 1630s the word 'caracole' was used in practice mainly to denote an equestrian half-turn. The Imperialists had no need to re-learn the cavalry charge from Gustavus, merely to be reminded.

At Breitenfeld, when faced by Imperialist cuirassiers on their 'heavy stallions', the Swedes on their small horses were completely outclassed, and Gus-

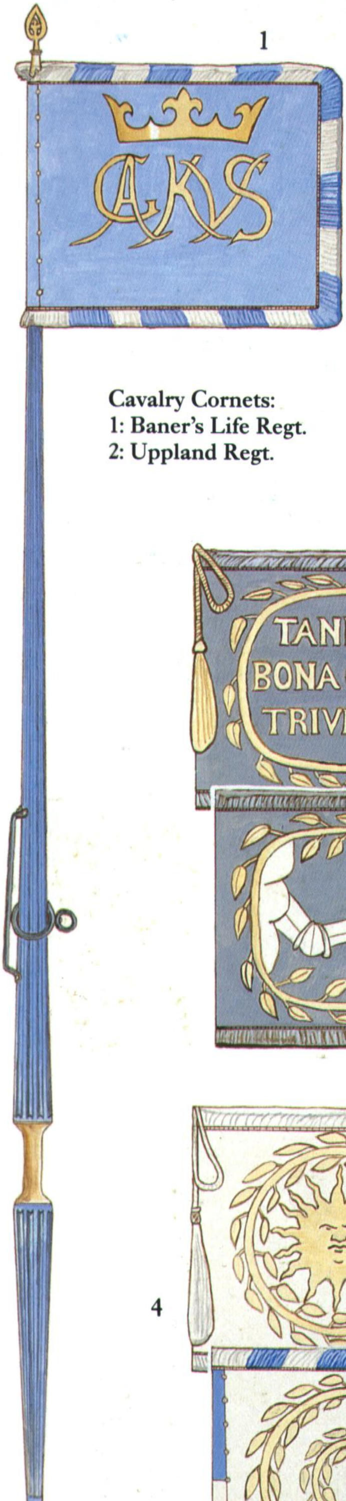

Battle at the Vistula mouth, 1628:
1: Leather cannon 2: Gunner
3: Artillery driver
4: King Gustavus Adolphus


Mounted infantry:
1: Dragoon
2: Unmounted dragoon
3: Mounted jäger
1
3
2

B


Finns and Livonians:
1: Aderkas's Livonian Cuirassiers
2: Tott's Swedish Cuirassiers
3: Stalhandske's Finnish Horse

1



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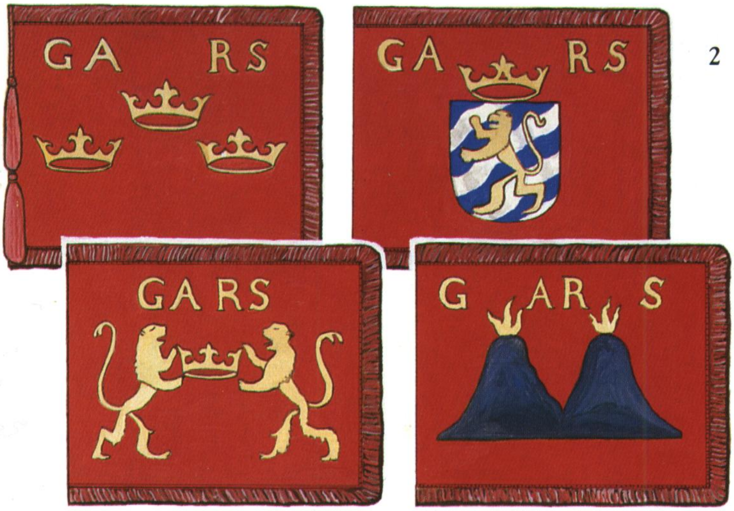
GA RS
GA RS
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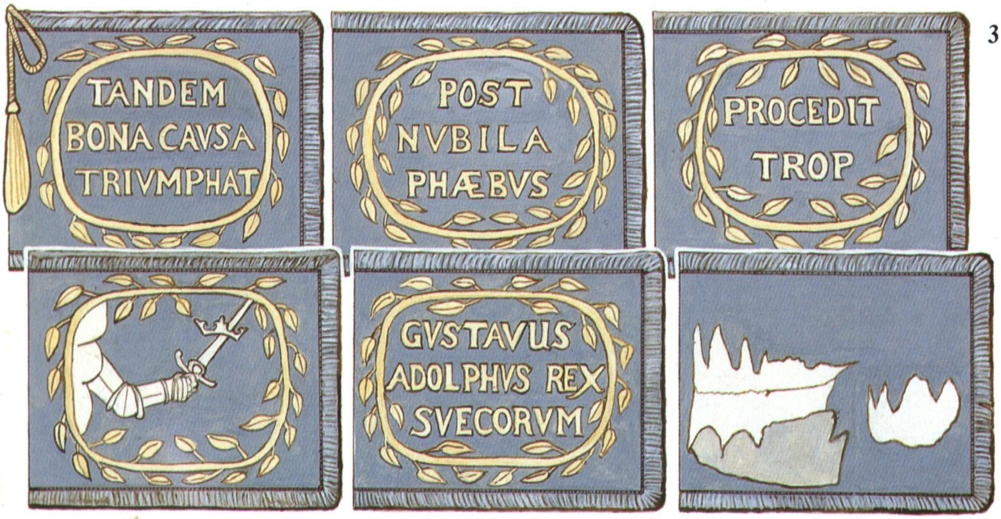
Cavalry Cornets:
1: Baner's Life Regt.
2: Uppland Regt.

3


TANDEM BONA CAVSA TRIVMPHAT
POST NVBILA PHÆBVS
PROCEDIT TROP
GVSTAVUS ADOLPHVS REX SVECORVM

3: King's German Life Regt.
4: Öhm's Regt.
5: Wilhelm of Weimar's Life Regt.

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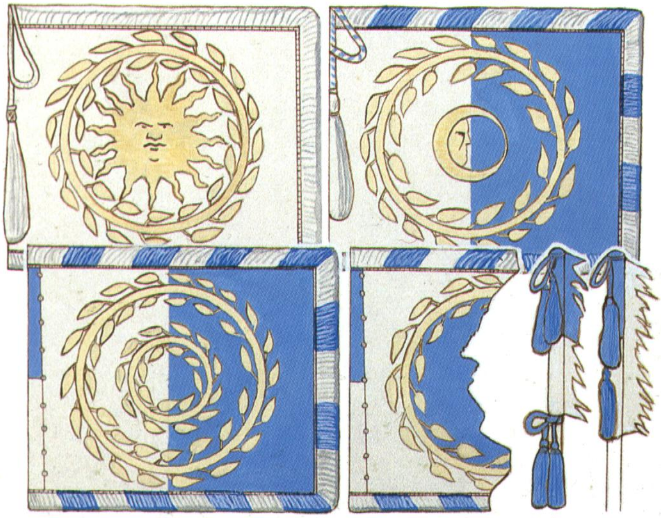

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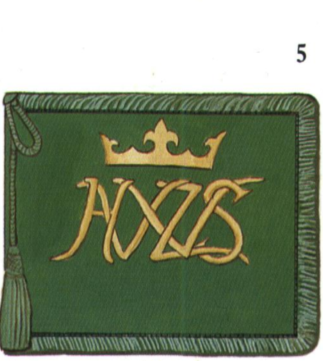
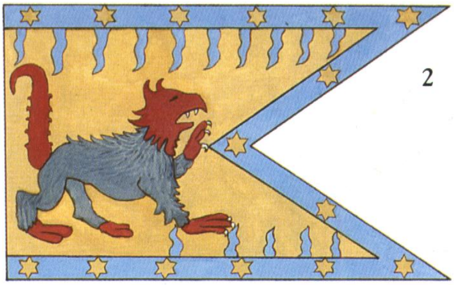


D

1: Horn's Dragoon Regt.
2: Holtzmüller's Dragoon Coy.
3: Winckel's Dragoon Coy., 1635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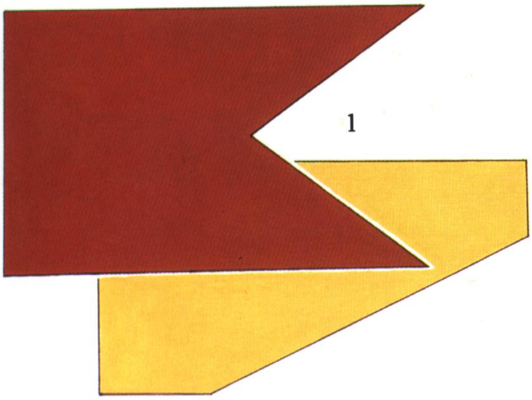
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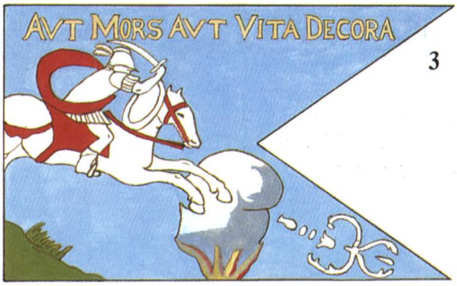
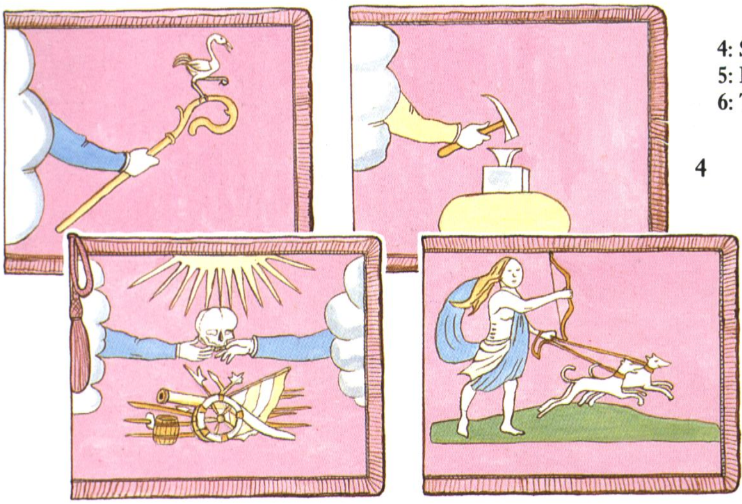

AVT MORS AVT VITA DECORA
3

4: Schaffman's Cavalry Regt.
5: Ernst of Weimar's Life Regt.
6: Tott's Cavalry Regt.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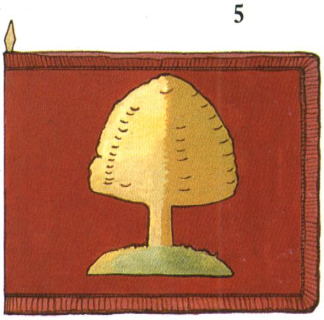
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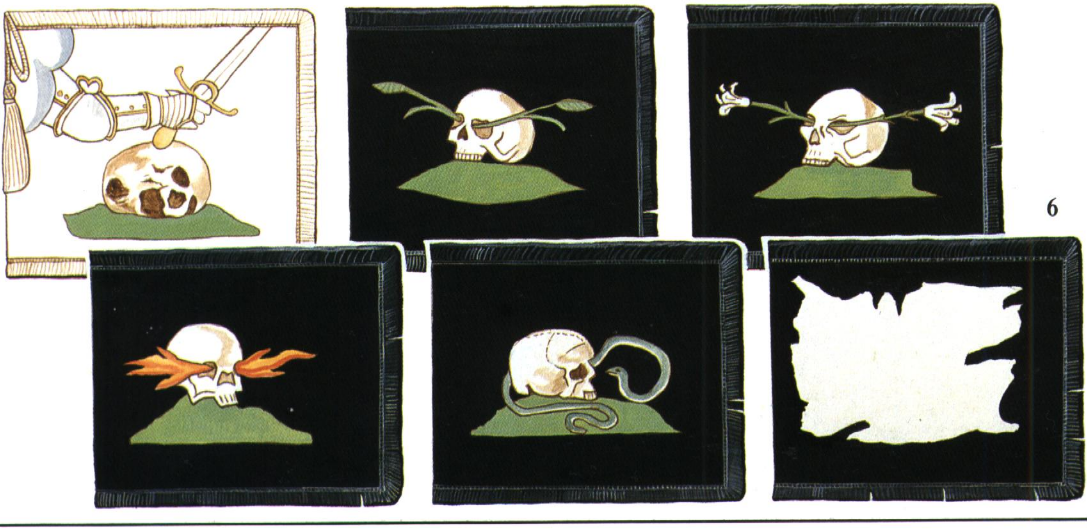
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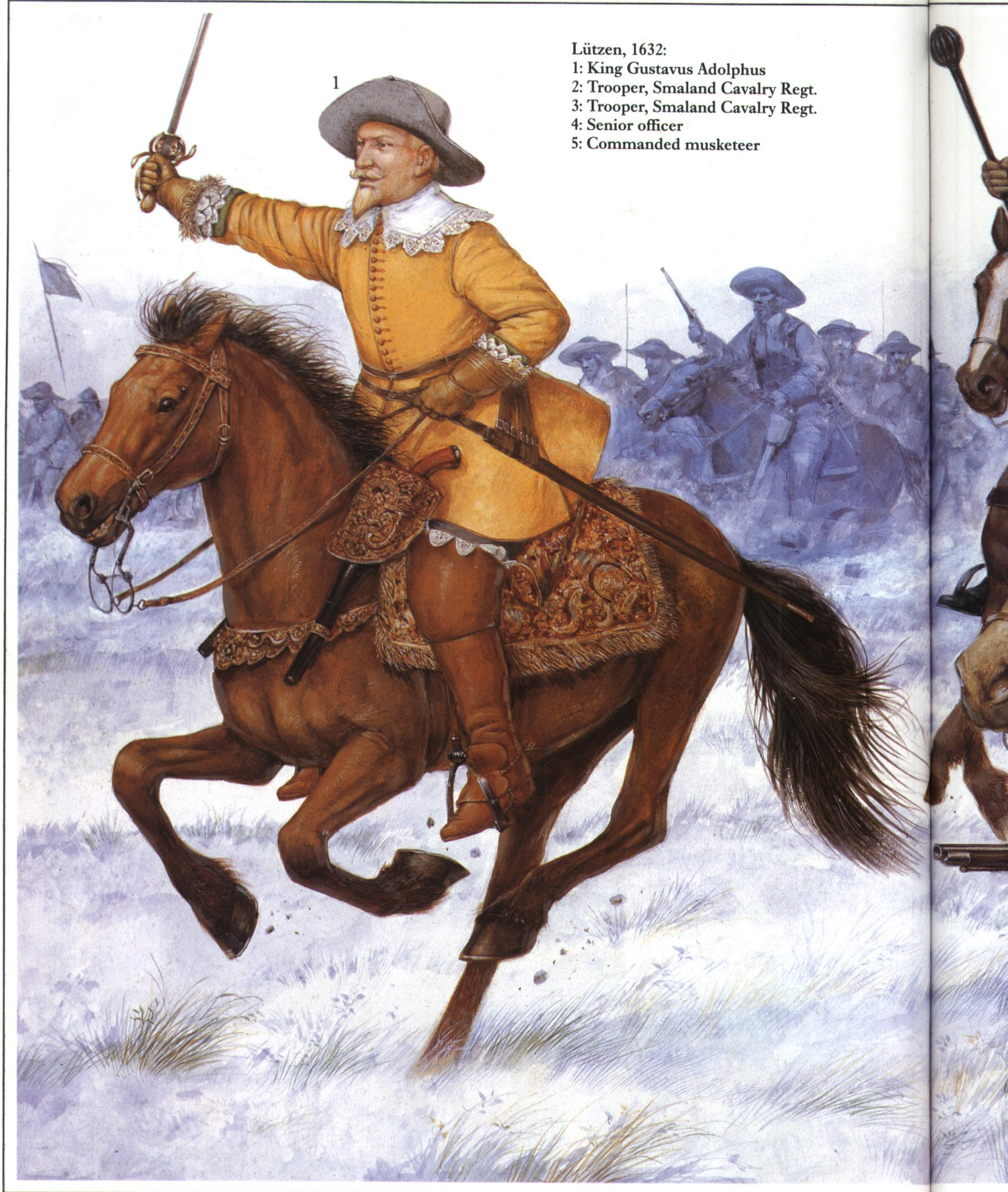
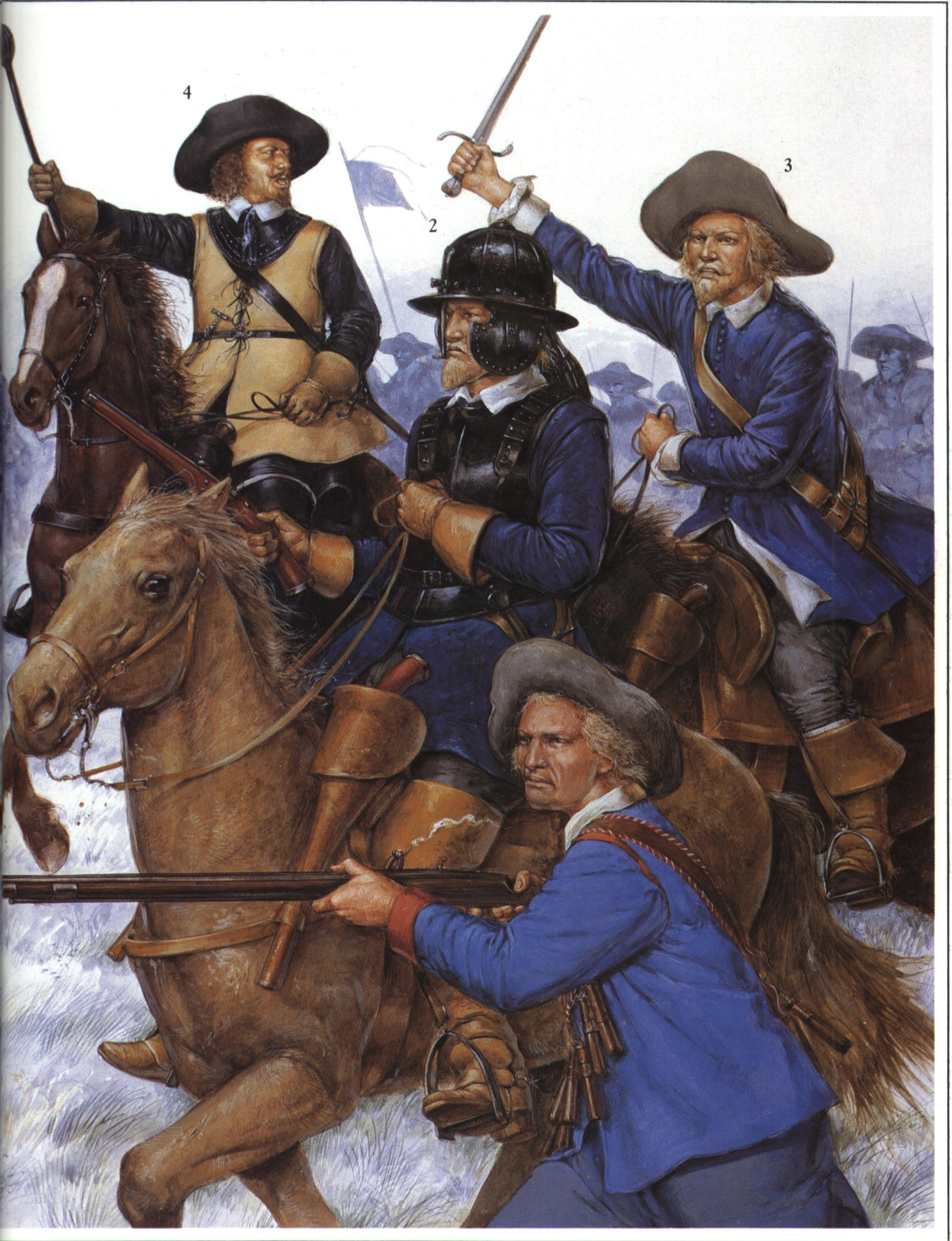


Lützen, 1632:
1: King Gustavus Adolphus
2: Trooper, Smaland Cavalry Regt.
3: Trooper, Smaland Cavalry Regt.
4: Senior officer
5: Commanded musketeer

F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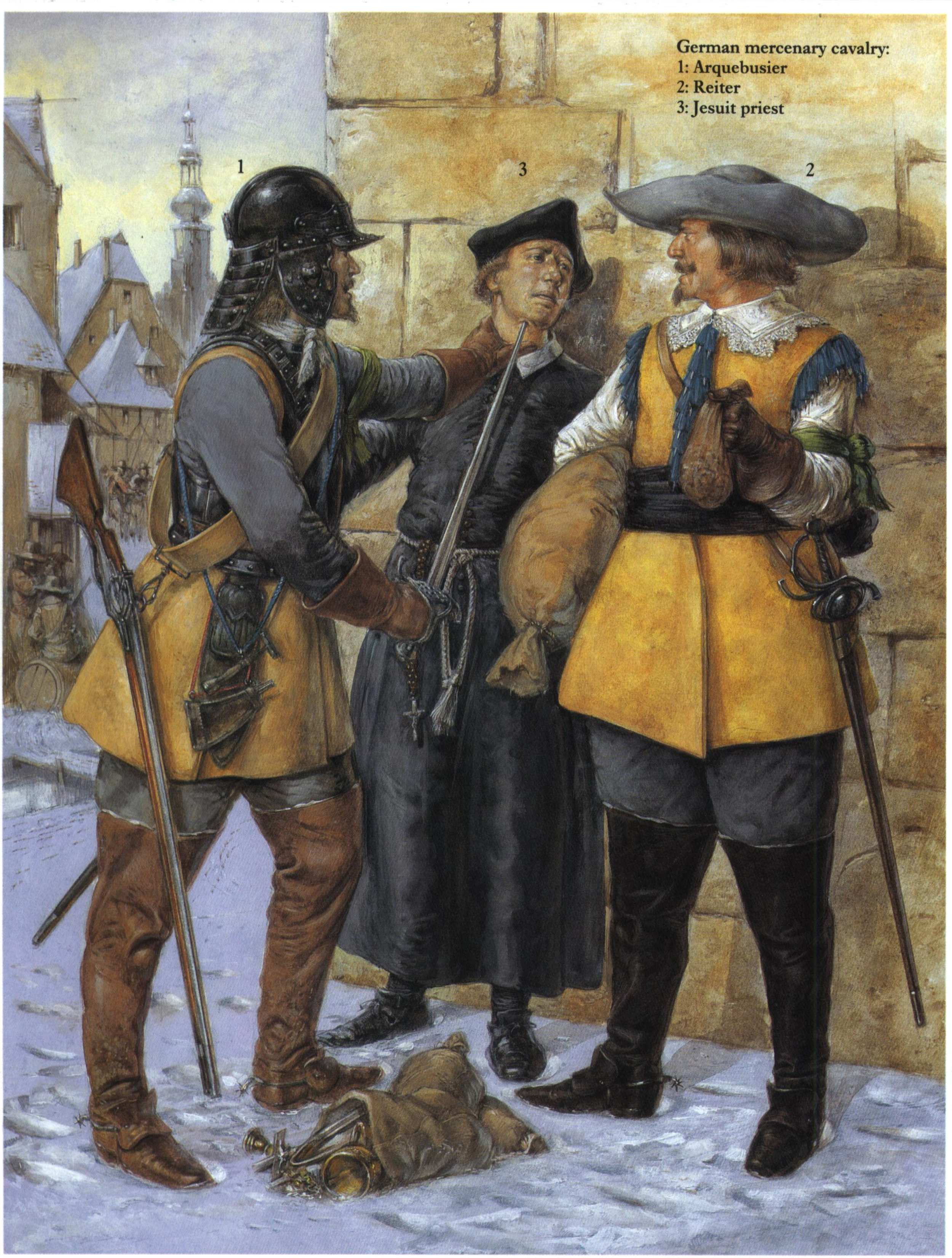
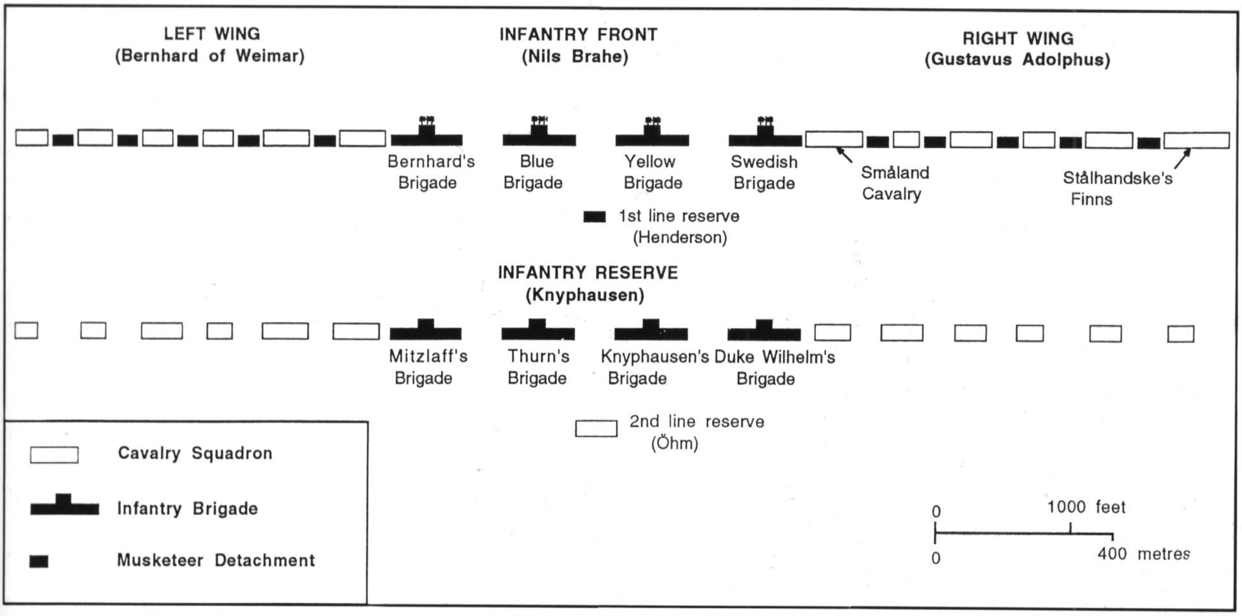

German mercenary cavalry:
1: Arquebusier
2: Reiter
3: Jesuit priest
1
3
2

G


LEFT WING
(Bernhard of Weimar)
INFANTRY FRONT
(Nils Brahe)
RIGHT WING
(Gustavus Adolphus)
Bernhard's Brigade
Blue Brigade
Yellow Brigade
Swedish Brigade
Småland Cavalry
Stålhandske's Finns
1st line reserve (Henderson)
INFANTRY RESERVE
(Knyphausen)
Mitzlaff's Brigade
Thurn's Brigade
Knyphausen's Brigade
Duke Wilhelm's Brigade
2nd line reserve (Öhm)
Cavalry Squadron
Infantry Brigade
Musketeer Detachment
0
1000 feet
0
400 metres

The Swedish battle order at Lützen, 16 November 1632. The infantry is deployed mostly in the centre, in eight 'Swedish brigades', while the cavalry are on the wings, in tactical 'squadrons' 100 to 400 men strong. Between each squadron is a detachment of 200 musketeers with two regimental 3-pounder guns. A single body of musketeers and one of cavalry form reserves in the centre. The deployment of the heavier artillery was delayed on the day of the battle, but they are marked here as they would normally have been placed—at the heads of the infantry brigades. The basic structure of Gustavus's battle order was copied in virtually all the larger pitched-battles fought in Western Europe for the remainder of the 17th century.

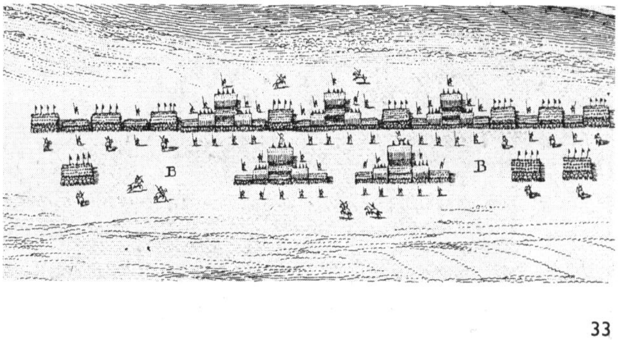
tavus knew that in a straight fight he did not stand a chance. Before the battle he advised his cavalry on special tactics. It was pointless, he said, for them to aim at the heavily armoured cuirassier's ribcages: 'they need only give the horse a deep thrust with the sword, twist broadly with it and rip open the wound; in this way horse and man would be quickly bowled over, and beaten just the same' (Chemnitz I, 206).

At Lützen, too, the fear of cuirassiers was foremost in Gustavus's thoughts when he ordered Stålhandske, the colonel of his fierce Finnish cavalry, to 'charge me those blacke fellows [cuirassiers] soundly: for they are the men that will undo us . . .' (Sw.Intell.3, p.133). We need hardly add that Gustavus was eventually killed by those very cuirassiers.

The secret of Gustavus's apparent success with cavalry was not the abolition of the caracole. In fact, far from reducing cavalry firepower he was merely insisting that pistols were used at their most effective range—ten yards, or preferably less.

Combination of arms

Gustavus had gotten rid of his arquebusiers in the 1620s, but their firepower was also never really abolished: merely replaced by something far more effective—musketeers on foot working in close co-operation with the cavalry. These musketeers were placed in the intervals between each cavalry squad-



The Swedish battle formation at the minor battle of Pfaffenhofen in Alsace, 10 August 1633. The cavalry wings are 'lined' (in contemporary jargon) with detachments of musketeers. The centre consist of five infantry brigades arranged chequerwise. The interval between these was usually set, according to Monro, so that a squadron of horse 'might march out in grosse betwixt the Briggads'; it is interesting here that there actually are cavalry squadrons in the intervals. (From Theatrum Europaeum, *III)* ron, in bodies of 50 to 200 men. They fired salvos at point blank range, in an attempt to break up attacking Imperialist cavalry, who were then countercharged by Swedish horse. Such musketeer detachments 'can easily push off the enemy's attacking cavalry and keep them back', wrote the Pomeranian veteran Schildknecht (iii, 186).

Gustavus used this tactic to great effect in the Polish compaigns, breaking up the charges of the 'winged' hussars before they could get near enough to do any damage with their five-metre-long lances. In Germany, too, he rarely fought even a minor action without musketeers supporting his cavalry.

But musketeer detachments were not the ideal solution. They reduced the cavalry to the speed of the infantry, and so removed their main advantage—mobility. Also, if the friendly cavalry were pushed back, the musketeers were left completely unprotected. Schildknecht notes that at Breitenfeld the musketeer detachments suffered crippling casualties; and that to prevent a repeat at Lützen, Gustavus took the extraordinary measure of giving out two regimental guns per detachment. But even with this concentration of firepower, Gustavus's cavalry at Lützen still took a hammering. 'Our horse did but poorely', wrote Fleetwood. Without the firepower they would probably have stood no chance at all.

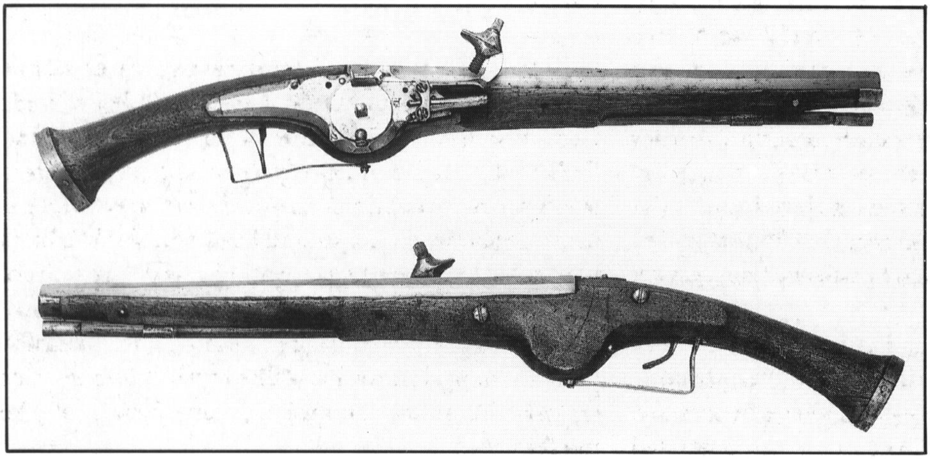
Gustavus's cavalry is regularly equated with Prince Rupert's impetuous cavaliers, who (it is said, with little proof) charged in the new, aggressive 'Swedish style' during the English Civil War. It would probably be more accurate to compare them with Cromwell's Ironsides: puritanical, solid, and firmly disciplined, but hardly wild.

CONCLUSIONS

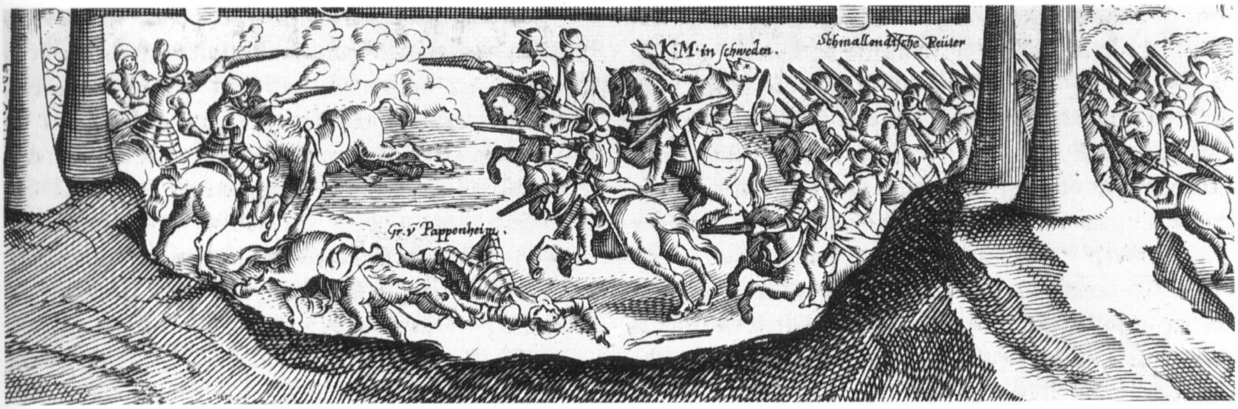
We are now in a position to answer, at least partly (though not comprehensively), the question posed at the beginning of Volume 1: what exactly did Gustavus, or men working in his name, actually invent?

It is easier at first to say what he did not invent. Foremost is the military uniform, which is much older than generally believed. The shortening of the pike to 11 feet was a myth created by the Reverend Walter Harte, in his 1759 biography of Gustavus, when he mistook an officer's partisan for a pike. The abolition of the musketeer's bandoliers to be replaced by newly invented paper cartridges are again both fallacies courtesy of the Reverend Harte. The combined swinesfeather and musket rest was probably invented in the 1640s or '50s. The first all-musketeer regiments were in fact incomplete units still being recruited or were freshly out of garrisons. Gustavus did not cause a permanent increase in the size of standing armies, which had to await improvements in military logistics first made by the French in the 1670s.

Many innovations occurred elsewhere in Europe as consequences of the Thirty Years' War and were taken up by Gustavus's army. The lightened musket and muskets without rests were both used to some extent, but not universally. A decrease (or alternatively even an increase) of the proportion of pikemen in foot regiments has been credited to Gustavus, mostly due to misunderstandings of the composition



Pistols were the principal weapon of cavalry in this period. The complexity of the wheellock mechanism meant that their cost was high: a pair with holsters cost between 5 and 10 Riksdaler—slightly more than a cavalryman's armour with helmet. Few armouries in Sweden were able to manufacture wheellocks, and most had to be imported. This pair, however, bears the anchor proof mark thought to belong to the Norrtälje factory (founded 1622). 'Short' pistols like these, with barrels of 34.4cm length, were slowly replacing the older ones with barrels of 60cm and more. (LRK 1591 & 1592)


K.M. in ſchweden.
Schmallendiſche Reüter
Gr. v Pappenheim.

A German print of the battle of Lützen. Gustavus is hit at the head of the Småland cavalry while Pappenheim lies already mortally wounded on the ground. The Småland horsemen ('Schmallendische Reüter') mostly wear felt hats rather than helmets, and few have armour; the Imperialist cuirassiers are altogether better equipped. The main weapon of both armies is the pistol. (UUB)

of the Swedish brigade, but this was a universal trend.

Gustavus made several innovations almost by accident, by transforming defects into virtues. The reduction of cavalry to three deep was probably initially due to a shortage of men. The lightening of cavalry armour and the introduction of the light 'cuirassier' were due to shortages of armour. Reliance on the sword rather than pistols and arquebuses, and in consequence the (greatly overstated) reintroduction of the cavalry charge, were due largely to a shortage of at first arquebuses and later pistols.

Some innovations were not actually made by Gustavus, but only brought by him to their maximum effect: the swinesfeather (without musket-rest); reduction of infantry formations to six deep; and the smaller, more flexible infantry formations.

Finally come conscious innovations, some of which may have had previous histories but were so dramatically transformed by Gustavus that it would be pedantic to take away the credit. These include a national army based on conscription of the peasantry (but not the full *indelningsverk*—which was a later addition), and the (ultimately unsuccessful) Swedish brigade. Regimental artillery, which followed naturally after earlier abortive experiments with leather cannon; commanded musketeers mixed among the cavalry; and salvo fire, are all examples of the use of overwhelming firepower, which in the final reckoning must rate as the single key to Gustavus's success on the battlefield.

Gustavus's innovations have long been seen outside of the context in which they belong: Protestant Germany. Far from being dreamed up in a remote Baltic war against Poland, and then demonstrated before a stunned audience in Germany, they were an integral part of the developments of the Thirty Years' War. It should not be forgotten that Gustavus's German mercenaries had nearly all fought in the earlier phases of the War, and provided a vast base of knowledge for Gustavus to work from.

It should also not be forgotten that Gustavus was perhaps even more important as a political and religious figure. He brought Sweden out of the Dark Ages and turned it into a first rate superpower. In Germany he united the factious princes and dukes, and was, in a very real sense, the saviour of Protestantism. Though many of Gustavus's technical 'innovations' are dubious at best, his status as one of the most influential men of European history is not open to question.

* * *

Napoleon believed that seven great captains had gone before him: Alexander, Hannibal, Julius Caesar, Gustavus Adolphus, Turenne, Eugene and Frederick the Great. In Napoleon's list, Gustavus is the first great captain of the modern era; the sixteen centuries between Caesar and him are a blank. This is why the centuries of slow evolutionary change have been forgotten; this is why Gustavus is said to have caused a military revolution; this is why he is credited with so many innovations. Gustavus Adolphus was simply the first *identifiable* great captain of the modern age.

THE PLATES

A: Leather cannon: the Vistula mouth action, Poland, 1628

On the night of 5/6 July 1628 Gustavus surprised six Polish ships at anchor in the Vistula estuary near the river mouth (Wisloujscie, Weichselmünde). The Poles had considered this marshy area impassable to artillery, and were caught off guard when Gustavus opened fire at dawn with two metal pieces and eight leather cannon. The *Tiger* blew up when a pre-heated 'glowing shot' hit her magazines; the explosion damaged the *Ritter St. Georg* and the *König David*, causing the first to run aground. The *König David*—which was hit by more than 70 cannonballs—barely made it upstream with the other surviving ships to the safety of Danzig. This was without doubt the most remarkable feat of Gustavus's leather cannon.

A1: Leather cannon

Though there are many surviving leather guns in European collections that are said to be 'Swedish', none of the originals made by Wurmprandt have yet been identified. We use contemporary drawings and Ripp's prototype barrel for this reconstruction.

Gun-carriages pose an even greater problem, though Hoppe's description of a Wurmprandt gun in 1627 suggests that they were fairly flimsy: 'Its carriage was made from simple panels without a single [metal] fitting, and its wheels were like on the smallest "Kalesse" or little waggon.' Only one contemporary carriage survives, on a Danish miniature leather gun at the Tøjhusmuseum in Copenhagen. It is a scaled-down version of the standard split-trail carriage, without any metal fittings. Gustavus's bronze regimental guns seem also to have been mounted on lightened standard carriages: several miniature models from the 1630s survive, as do several full-sized examples from later in the century. The cartridges in the foreground are based on surviving examples at Skokloster. Cartridges are known to have been in use in the mid-16th century (and possibly in the late 15th) and were certainly not invented by Gustavus.

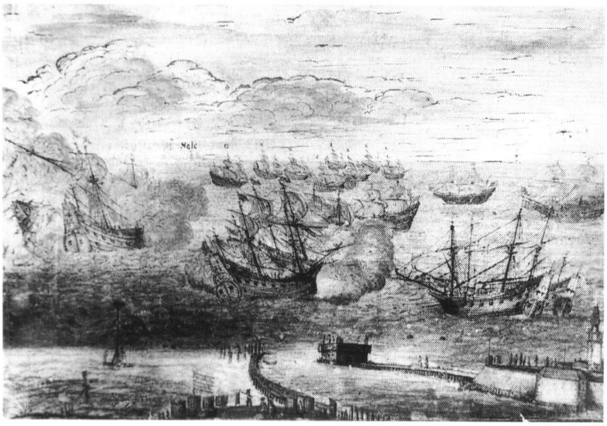
A2: Gunner (Konstapel)

Artillerymen were sometimes issued with clothing but the colours were seldom specified. A rare example was in 1628, when the artillery master Mats Pederson and a clerk between them received 10 ells (6 metres) of black broadcloth and 1 ell of black brocade (WardAccs 1628, item 63). It is not certain how typical this was, but dark colours would obviously be the most practical for men handling gunpowder.

This gunner, blowing on a linstock, is reconstructed in clothing from the warship *Wasa* which sank in August 1628, less than two months after the Vistula mouth action. The most complete garment recovered was a small waisted jacket (find number W7883e) made from good quality black cloth. It clearly belonged to an officer or technical member of the crew, and is perhaps appropriate for a senior gunner. A number of black broad-brimmed felt hats, and several pairs of simple tall boots, were also found.

A3: Artillery driver (Kuskar)

This figure—with his fur hat and particularly short jacket—is based on a Swedish regimental gun driver on a print of the battle of Breitenfeld. The main failing of the leather cannon was that the thin copper barrel was covered in heat-insulating canvas and leather, so that in prolonged use it quickly overheated



Gustavus's efforts to turn Sweden into a naval power were at least as important as his reform of land forces; the ill-fated warship Wasa *is only the best known of his schemes. The action shown here, against the Polish fleet off Oliva near Gdansk on 28 November 1627, was the largest naval battle of his reign. In the foreground is the mouth of the Vistula and the lighthouse fort near which the action in Plate A took place. From the autograph album of Heinrich von Böhme von Namslau, entry made in Danzig by Schönfeldt in 1633. (PAN Library, Kórnik, Poland, MS.1508)* and wore out or burst. The ready supply of cooling water in the nearby Vistula may account for the weapon's unusual success in this action.

A4: Gustavus Adolphus

Gustavus's simple and modest taste in clothing was often commented upon. One eyewitness remarked that he was 'Meanely accoutred in apparell, without any pompous or vaine-glorious shew'; and that 'His officers in their clothing were dressed in far more stately manner than him'. We base his dress on the (in truth slightly earlier) 'Dirschau' clothing of 1627. The tailor's accounts survive for this or a very similar replacement outfit (MR 1628/36 f.32). The accounts also show that most of the scarves (sashes) made for Gustavus were black—one of his livery colours—rather than the blue shown on dubious portraits.

B: Mounted infantry

B1: Dragoon

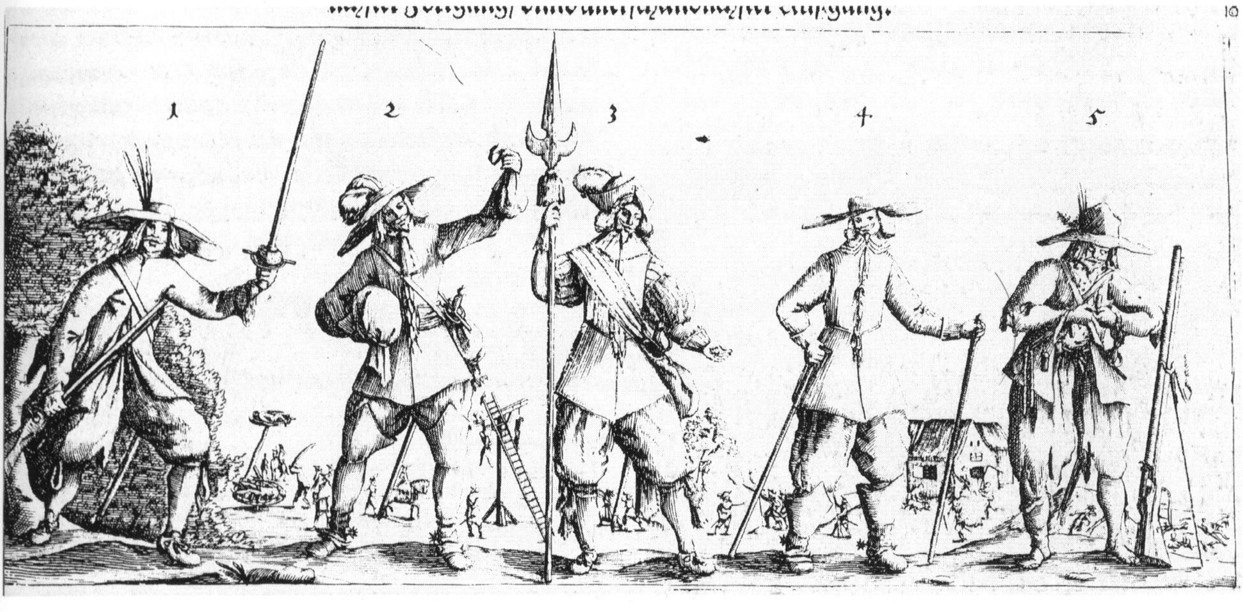
Dragoons moved on horseback but fought on foot. The quality of their horses—called 'nags' or 'bidets' by contemporaries—was too poor to allow them to fight on equal terms with cavalry. In outward appearance dragoons were almost indistinguishable from infantry; they even wore shoes rather than boots and spurs, since—as Wallhausen noted—these would only impede their movement on foot. Inevitably, though, as a campaign progressed, dragoons affected the 'look' of cavalrymen. This dragoon is based on a contemporary print (reproduced elsewhere in this book). He seems to have found an alternative to the cumbersome bandolier with its wooden flasks—perhaps a cartridge pouch of the type used by cavalry.

B2: Unmounted dragoon

Many dragoons did not have horses, even long after they were levied. In January 1631 less than half of Taupadel's dragoon squadron were mounted; and more than half of Kagg's dragoons were still 'unridden' in late 1632. It is likely that John Henderson's 228 musketeers who formed the infantry reserve for the front line at Lützen had originally been levied as dragoons, but never received horses at all.

The dragoon pictured here has finally obtained a horse, but only after a long period of service on foot: Arvid Svensson's dragoons were 'completely barefoot' before they were issued the black cloth for stockings mentioned earlier. He has added a sling to

Military types in Germany. The accompanying text (not shown here) does not identify them any further. No. 1, judging from his shoes and light firearm, must be a dragoon; no. 2 and no. 4 are cavalrymen or officers, to judge from their boots; the partisan and shoes of no. 3 suggest an infantry officer; and no. 5 is an ordinary musketeer. Note that only officers and cavalrymen wear buffcoats: the dragoon (no. 1) and musketeer (no. 5) have unwaisted cloth jackets. The poorer men also have simple feathers, rather than expensive plumes which were favoured by officers. (Anonymous German broadside, c.1635)



his light matchlock musket to adapt it for mounted use, in the same ad hoc manner shown by Wilhelm Dilich in his *Kriegsbuch*.

B3: Mounted jäger, Nils Krak's 'gameshooters'

Krak's gameshooters were a small élite body of mounted Swedish marksmen that followed Gustavus in Germany. They were issued by the state with small-bore hunting muskets, which may have been rifled and were clearly ideal sniping weapons.

The gameshooters were regularly clothed by the Royal Wardrobe: in February 1632, 34 men were each given just under 8 ells (about 4.5 metres) of blue cloth. Only 36 buttons were supplied per man, probably too few for a casack (WardAccs 1632, item 45). Hats were not issued specifically, so we add a 'montero', which could have been made out of the cloth issue. The montero was just coming into fashion in Germany in 1630, and on one German print is described as an '*Engeländischen Nebelhauben*' ('English foghat'). In cold weather the upper peak could be pulled down, converting it into something like a balaclava. It became particularly favoured by officers and hunters.

On 8 May 1632 Sebastian Dehner of Rothenburg ob der Tauber noted that: 'A company of [Swedish] horsemen arrived from Bibert—very large stately people, many with long beards, all dressed in blue—they looked very fierce'. It is tempting to suggest that these were none other than Krak's hardy Swedish woodsmen in their new blue uniforms.

C: 'Barbarians from the North': Finns and Livonians

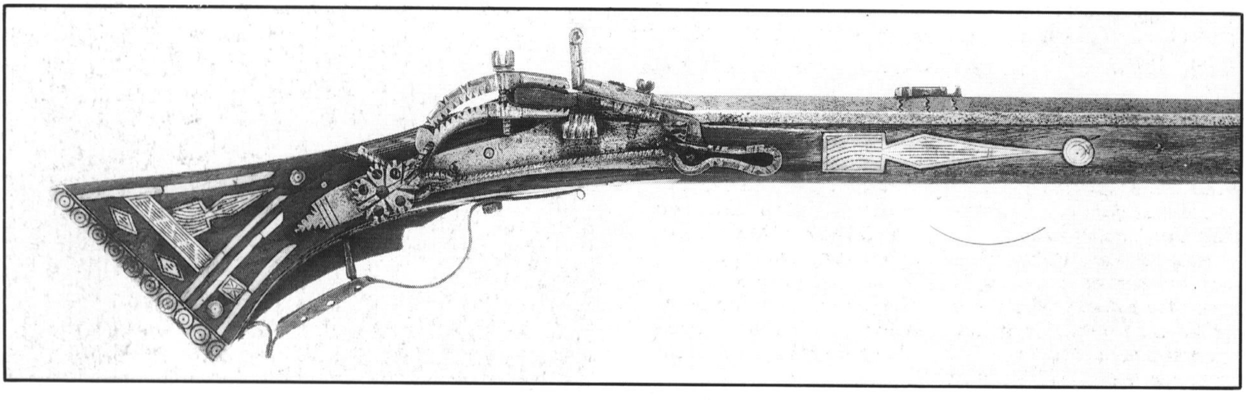
Some central and southern Europeans saw Gustavus's landings in Germany as an invasion of pagan northern savages. Among the 'barbarian' contingents singled out were the Livonians (modern Latvians) and the Finns, both of which were confused with the magic-casting Lapps. In fact the Livonians (largely descendants of the Teutonic Order) were as civilised as any continental Germans, and provided Gustavus with some of his best cavalry.

C1: The traditional cuirassier: Aderkas's Livonians

The Swedes raised a number of mercenary cuirassiers in Livonia in the early 1620s; Gustavus's first 'Lifecompany' of cuirassiers contained many Livonians and was commanded by one—Captain Jörgen Aderkas (or Adrikas). This was one of the few cuirassier units to go to Germany, where it was combined with four other Livonian companies under Fabian Aderkas.

Cuirassier equipment was bought largely from suppliers in the Low Countries, especially Louis De Geer. The Swedes found, however, that it needed modifying for the Baltic theatre. In 1622/23, De Geer's agent noted that the Swedes would not accept Dutch-pattern cuirassier armour with permanently attached cuisses (thigh guards), as they wanted to be able to remove them if the rider had to fight on foot. Again, in 1627 Jakob de la Gardie wrote to De Geer

The main weapons of Krak's sharpshooters, which were issued by the state, were hunting guns called fögelbössor*—fowling pieces—or* Smålands bössor, *after their main place of manufacture. These were small bore weapons of only 8mm to 10mm calibre (compared with about 19mm for muskets), fitted with snaphaunce locks (proto-flintlocks), and usually rifled. This Småland rifle has bone inlay and dates from the early or mid-17th century. (Livrustkammaren)*



from Riga ordering for a company of cuirassiers '100 good armours ... with a good pot and not a closed helmet, shot proof for a pistol' (both quoted by Dahlgren, I, p.145). This cuirassier we show in full three-quarter armour with detachable cuisses, but still with the old style 'closed helmet'.

C2: The 'Swedish' cuirassier—Tott's Regiment

Full cuirassier armour was both heavy and uncomfortable, especially on a long, hot, summer campaign. The more practical open-faced 'pot'—usually in Hungarian style as here—replaced the claustrophobic 'closed' helmet. The troops themselves seem to have discarded some of their armour unofficially. Before long all that was left was effectively the armour of the arquebusier or 'light horseman'—a back- and breastplate.

Like many other generals' bodyguards, Tott's life company received an issue of *Dusinken* cloth early in 1631 (about 3.7 ells per man), but the colour was not specified (Wardrobe accounts 1631, item 205). The black colour of the jacket here is speculative. Tott's life company seems to have contained a high proportion of Finns—survivors of the time when Tott was 'Colonel of all the Finnish cavalry'.

C3: Finnish cavalryman (Hackapell): Stålhandske's Regiment

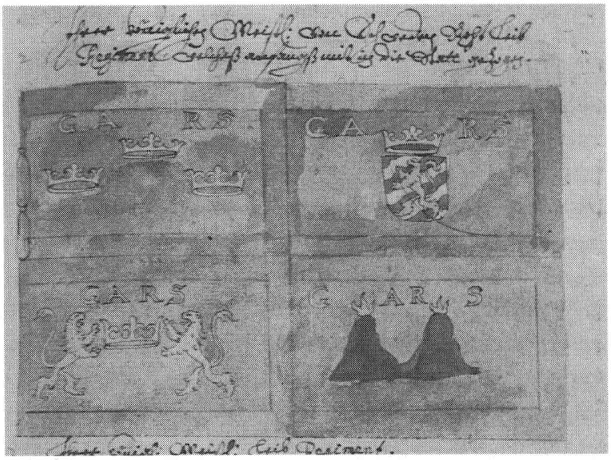
Much of the savagery of the Finns seems to have come from over the border in Russia. Other Eastern traits were lightness and mobility, so that Finns often acted as light cavalry: at Breitenfeld, for example, during the advance to contact, 'the King sent before certaine troupes of his Finnes, being of his best Cavallerie for Discoverie' (London PRO, SP95/3/f.126). The Finns (and indeed Swedes and German mercenary cavalry, too) were sometimes recorded with Eastern weapons—such as the Polish sabre shown here, or war-hammers. Better equipped Finns in the early period would probably have worn Polish-style helmets as Plate F2. A comment by the French ambassador's secretary, Ogier, perhaps best sums up the Eastern character of Finnish cavalry: 'The Swedes have the Finns, as the Poles have the Tatars'.

D: Cavalry cornets

Each company of a cavalry regiment had its own standard, which by the late 1620s was called a cornet (Swedish and German *Kornett*). The cornet was usually between 50 and 70cm wide and about 50–55cm high—only $\frac{1}{16}$th the size of an infantry colour—and was edged with a dense fringe of fine thread. It was carried on an old-fashioned looking fluted lance, which was often painted. The flag itself was made from a single piece of patterned damask silk, sometimes cheaper plain satin, doubled around the lance. Decorations were painted on or applied with gold leaf, more rarely embroidered. The flags in these two plates are all reconstructed from the watercolours in Möhner's manuscript chronicle.

D1: General Banér's 'Life Regiment'

Johan Baner was authorised to raise a life company of mercenary cavalry only a few weeks after Gustavus landed in Germany. Like many other life companies this was expanded to a full *Leibregiment* in 1632. Möhner shows four standards of the regiment, all with the same crowned cypher: 'GAKVS' (Gustavus Adolphus König von Schweden). Two are identical to the one shown here; the third has plain blue fringes; the fourth, probably the colonel's, has a white field, white fringes, and white tassels.



The standards of 'His Royal Majesty of Sweden's Red Life Regiment'. They belong almost certainly to the Uppland cavalry regiment—the 'burning mountains' emblem on one of the flags is the arms of Västmanland, a district that supplied cavalry to that regiment. The borders clearly represent fringes. Watercolours from Reginbaldus Möhner's manuscript chronicle on the Swedish Occupation of Augsburg, 1632–35, **Triennium Sueco-Augustanum.** ***(Archiv des Bischoflichen Ordinariat, Augsburg)***

D2: Uppland Cavalry Regiment

Native Swedish cavalry companies were first grouped into regiments in 1627, and began to receive cornets with fields of a single regimental colour in the following year. The Uppland cavalry was issued one red cornet in 1628 (to match a red cornet issued in 1627), and four more (made from 2.5 ells each of red damask) in June 1629. However, only in June 1631, shortly before departing for Germany, did the regiment receive 24 books of gold leaf and 8 of silver leaf for decorating these cornets (State trophy collection archive). Möhner calls this regiment the King's 'Red Life Regiment of Horse', clearly a reference to cornet colour. This colour name, however, is an almost unique example: unlike the infantry, Swedish cavalry were not normally known by colour names.

D3: King's German 'Life Regiment'

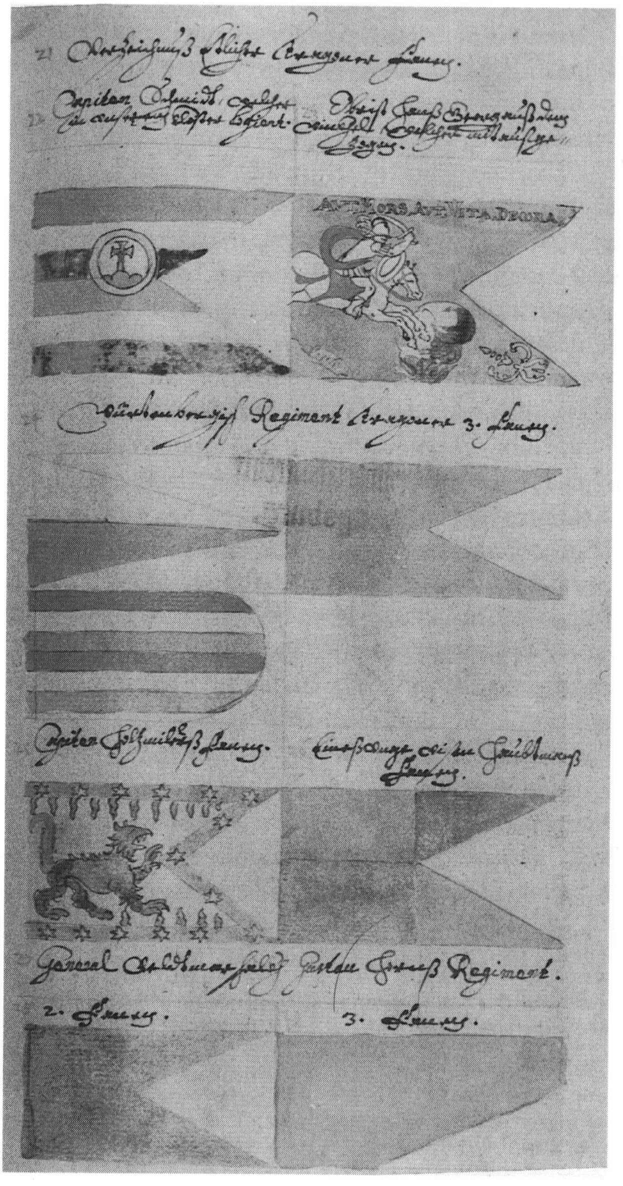
During the Polish campaigns Gustavus had maintained at first a company and then an ad hoc squadron of mercenary cuirassiers as his 'Lifeguard of Horse'. In 1630 these companies and others, including four raised in Stralsund, were combined under the Count of Ortenburg to become the King's 'Life Regiment of Horse'. Ortenburg died in June 1631, and this title passed to what appears to be an entirely different unit brought into Swedish service after Breitenfeld by Duke Bernhard of Weimar. Möhner painted the flags of 'His Royal Majesty's Leib Regiment' in Augsburg in April 1632. When Bernhard made a name for himself in his own right, the unit became known instead as Duke Bernhard's *Leibregiment*. It was the strongest regiment at Lützen, fielding around 500 horsemen.

D4: Öhm's Regiment

Öhm's (ex-Streiff's) regiment was one of Gustavus's oldest cavalry regiments and served in nearly all his battles—hence the wear and tear to some of its standards. The intact ones probably belong to companies raised in summer 1631 to strengthen the unit from squadron to regiment. The sun on the all-white standard clearly represents the colonel; the moon on another, probably the lieutenant-colonel. Receipts have so far been found only for 33 books of gold leaf to decorate the flags, in July 1631. Möhner shows two identical versions of the cornet with a double ring of leaves.

D5: Duke Wilhelm of Weimar's 'Life Regiment'

After Breitenfeld, Duke Wilhelm of Sachsen-Weimar was appointed second in command of all Swedish forces in Germany. The monogram 'HWzS' (Herzog Wilhelm zu Sachsen) indicates that though technically part of the Swedish army, his troops owed their allegiance to him rather than to Gustavus. Möhner shows three identical green cornets and one white one. The regiment in fact had 12 companies, but at Lützen fielded only 120 men: Duke Wilhelm clearly was not nearly as charismatic as his younger brother Bernhard.


AUT MORS AUT VITA DECORA

E1–E3: Dragoon flags

The typical Swedish dragoon guidon contained 7 to 9 ells (4.2 to 5.6 metres) of damask silk. When doubled and cut with two tails this gives dimensions slightly over 1 metre in the hoist by 1.4 to 1.8 metres in the fly.

E1: Field-Marshal Gustav Horn's Dragoon Regiment

Horn's dragoon regiment, like many other dragon units, has left little trace in the records. It is first mentioned with three companies in 1633/34, and was six companies strong by the battle of Nördlingen in September 1634, where Horn was captured. Möhner notes above his watercolours that the regiment had two flags of the brick-red type and three of the yellow. This lack of uniformity is partly due to the size increase, but is also a sign of the rather temporary nature of many dragoon units.

E2: Holtzmüller's Dragoon Company

Captain Gottfried Holtzmüller was commissioned to raise a company of 150 dragoons in August 1631. His company appears in the records briefly in 1631, disappears for nearly two years, and then re-appears in Horn's army in 1633. In the intervening period it had probably belonged to one of the larger regiments. The griffon-like animal could be Möhner's interpretation of what is in fact a dragon. It has often been suggested that dragoons got their name originally from dragons depicted on their standards. The reverse is probably true—dragon devices were used because of the chance similarity of the words.

E3: Colonel Winckel's Dragoon Company, 1635

The design on this guidon is based on the story of the mythical Marcus Curtius. According to legend, a steaming chasm had opened in the Roman Forum, and the seers had declared that it would only close when Rome's most valuable possession was thrown in. Curtius, clearly not a modest man, immediately jumped in, and the chasm duly closed, leaving a pond, the *Lacus Curtius*, in its place. The reference to self-sacrifice for the greater good made this a favourite flag emblem.

The proprietor of this company was Hans Georg aus dem Winckel, who was also colonel of the 'Old Blue' Regiment of Foot. It is possible that this is the flag of a company of that regiment which he has converted to dragoons. Another such company of converted dragoons of the Yellow Regiment are recorded under Major Buraeus in Augsburg in April 1633 (Mankell, p.179). With further recruitment they could conceivably have become part of Horn's dragoon regiment—accounting for the ad hoc 'conversion' on the yellow flags of Horn's regiment in plate E1.

Dragoon flags from Möhner's chronicle. Dragoons were still a relatively new troop type, and their flags varied in design. Möhner describes these as (from top left) of Captain Schmidt's company 'which was lodged in our monastery [in Augsburg]'; Colonel Winckel's 'which marched out with him' (when he surrendered Augsburg in 1635); three Württemberg (militia) companies; Captain Holzmiller's; 'an unknown captain's flag'; and five flags of 'General Fieldmarshal Gustav Horn's Regiment'.

E4–E6: Other mercenary cavalry regiments

E4: Schaffmann's Cavalry Regiment

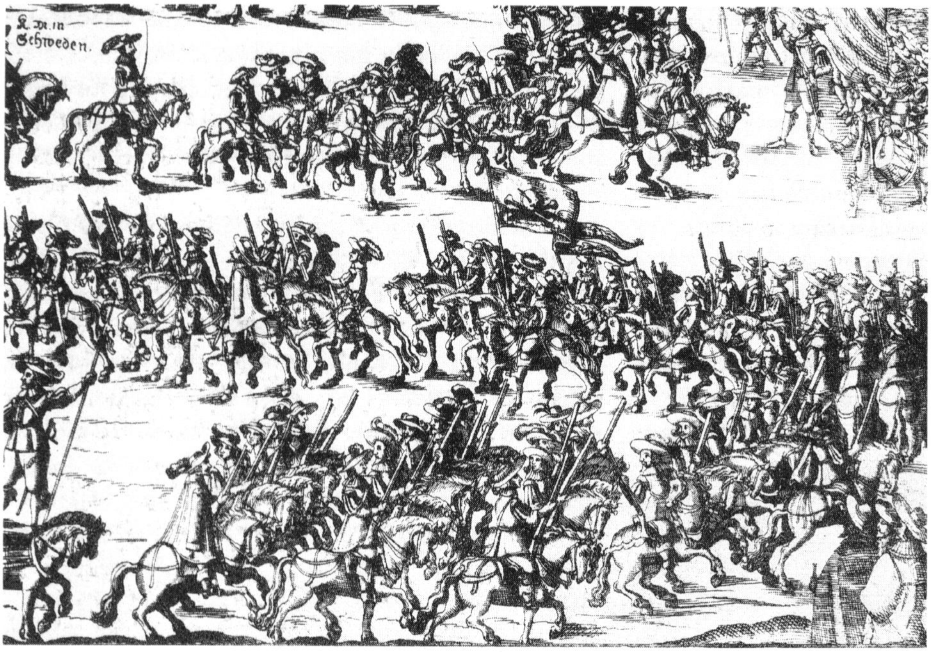
Schaffmann was one of several Bohemian exiles, who had lost their lands at the beginning of the Thirty Years' War and served Gustavus in the hope of getting them back. His regiment was made up largely of Czechs and Silesians. The designs are of the typical 'emblem' type, which were normally accompanied by mottos, but these have probably been omitted by Möhner.

E5: Duke Ernst of Weimar's Life Regiment

This solitary flag is the only one shown by Möhner for a regiment which in fact had eight companies. Duke Ernst was the youngest of the three Weimar brothers.

E6: General Tott's Cavalry Regiment

'A fierce man' is how the *Swedish Intelligencer* describes Åke Tott, and from these flags it is easy to see why. The skulls are a canting play on Tott's surname, *tot* being the German for 'dead'. Tott's regiment was present at Breitenfeld, and also at Lützen though under a new colonel, Karberg. Twelve cornets were issued in Germany in February 1632: each one having $2\frac{1}{2}$ ells (1.5 metres) of black damask, $4\frac{1}{2}$ ounces of half yellow/half black fringes, plus a cord with tassels (WardAccs 1632, item 108). Möhner, inexplicably, shows all black fringes.



Gustavus's escort during his entry to Nuremberg in March 1632. Though identified in accompanying text as dragoons, they appear to be dressed as cavalry, complete with buffcoats and slashed cloth sleeves. This may be an error, though dragoons did inevitably imitate the dress of cavalry. Their flag, a 'blood red cornet, painted with a death's head lying on two bones crosswise, and also a dragon' aroused quite a stir at the time. It may be a confused blend of the flags of Holtzmüller's dragoons and Tott's horse—see Plate E. (From Theatrum Europaeum, *II)*

F: The Final Charge: Lützen, 1632

The circumstances of Gustavus's death at Lützen have long been obscured by the thick mist and smoke that cloaked the battlefield. The following reconstruction is based only on eyewitness testimonies.

The fateful events began when Gustavus personally led the Småland cavalry forward against Götz's and Piccolomini's Imperial cuirassier regiments which were attacking the Swedish infantry centre. During the attack Gustavus was hit above the left elbow by a bullet, which broke his left arm 'completely in two'. The cavalry continued forward without him, while he dismounted and had his arm bound. Gustavus then remounted and may have attempted to return to the fray, but delayed shock got the better of him. His stablemaster Schulenburg took his horse's reins and began to guide him back to the Swedish lines.

In the mist, the royal party numbering about six persons ran into further Imperial cuirassiers. They tried to dash for safety, but the cuirassiers gave chase. Gustavus's personal bodyguard Anders Jönsson was cut down; Gustavus himself was shot in the back and took several sword thrusts through the body. His page Leublfing saw him fall from his horse and, though wounded himself, turned back and attempted to give him his own mount; but the cuirassiers were too many, and the survivors scattered. At this point Piccolomini appeared on the scene in person; he later wrote that he saw a fatally wounded Swedish officer on the ground and still breathing, who his men assured him was Gustavus. When another Swedish attack seemed imminent, one of Piccolomini's men finished Gustavus off with a pistol shot in the temple.

F1: Gustavus Adolphus

Gustavus's body was recovered from the battlefield later in the day. It had been looted of everything except three shirts. His famous buffcoat was sent by Piccolomini to Emperor Ferdinand II in Vienna, and was returned to Sweden only after the First World War as a token of Austrian gratitude to the Swedish Red Cross. Gustavus's horse 'Streiff' returned heavily wounded to the Swedish lines, but died soon afterwards; it was later stuffed, and put on exhibition in Stockholm, complete with the harness, pistols and sword allegedly carried at Lützen. For a detailed study of these items see the author's article, 'Gustavus Adolphus, Lützen 1632', in *Military Illustrated* No. 21 (London 1989).

F2–F4: The Småland Cavalry Regiment

Most pictures of Gustavus's cavalry show them wearing cloth jackets rather than buffcoats. However, little evidence has been found for issues of uniforms, even though these were intended in theory. The

Småland cavalry had blue standards, but it is no more than a coincidence that we have chosen to show them here mostly in blue coats.

F2: Trooper, front rank

This trooper has the full equipment of the Swedish *light horseman*: a back- and breastplate, helmet, pair of pistols, and a sword. The Polish-style helmet is restored from the De Geer helmet drawing. Pictorial evidence suggests, however, that by 1632 the broad brim had gone out of fashion, to be replaced by Hungarian-style helmets of the type worn by C2.

F3: Trooper, rear rank

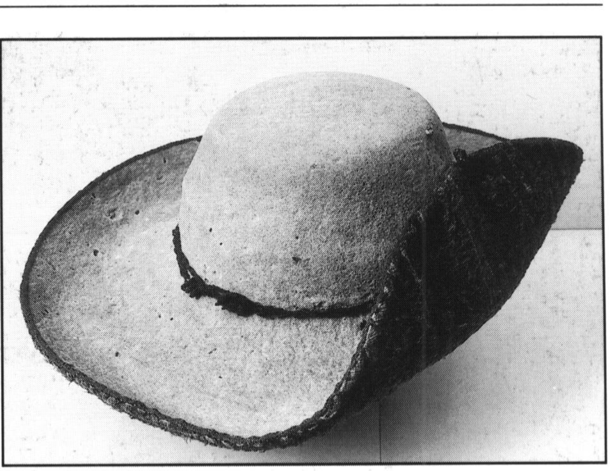
Because of shortages, Gustavus instructed in late 1630 that available armour should be given only to the front ranks of his mercenary regiments. It is not certain if this was also the case with the native cavalry. By 1632, eyewitness descriptions and pictures suggest that few Swedish cavalry wore any armour at all. The native regiments, however, were more closely supervised and so probably better equipped than most. Gustavus instructed the rear ranks not to use pistols before contact and to charge instead with swords drawn, and reserve the pistols for the mêlée.

F4: Senior officer

Otto Sack, colonel of the Södermanland cavalry, was present at Lützen with his regiment. His appearance here is taken from a portrait dated 1634. His black clothing may be in mourning for Gustavus, though the account books show widespread issues of black cloth to officers in 1630 and earlier. The feathered mace is carried as a symbol of rank in the portrait, and is another example of Polish influence. The spanner, for 'spanning' his wheel-lock pistols, is added from a second, almost identical portrait belonging to the Sack family.

F5: 'Commanded' musketeer, Gabriel Kyle's Swedish Brigade

Close fire support from bodies of 'commanded' musketeers was the key to the success of Swedish cavalry. Without it, the Swedes would have been quickly overwhelmed by the better armoured and better mounted Imperial cuirassiers. Commanded musketeers were deployed in formed bodies, in the intervals between the cavalry squadrons. At Breitenfeld and Lützen these were 200 strong, and were provided by the 'surplus' musketeers from the infantry brigades, as well as from regiments like Banér's which had not yet been issued with pikes. The native Swedish infantry supplied several musketeer detachments at Breitenfeld, and may have done the same at Lützen, where the Swedish brigade under Gabriel Kyle had a large number of 'surplus musketeers'.

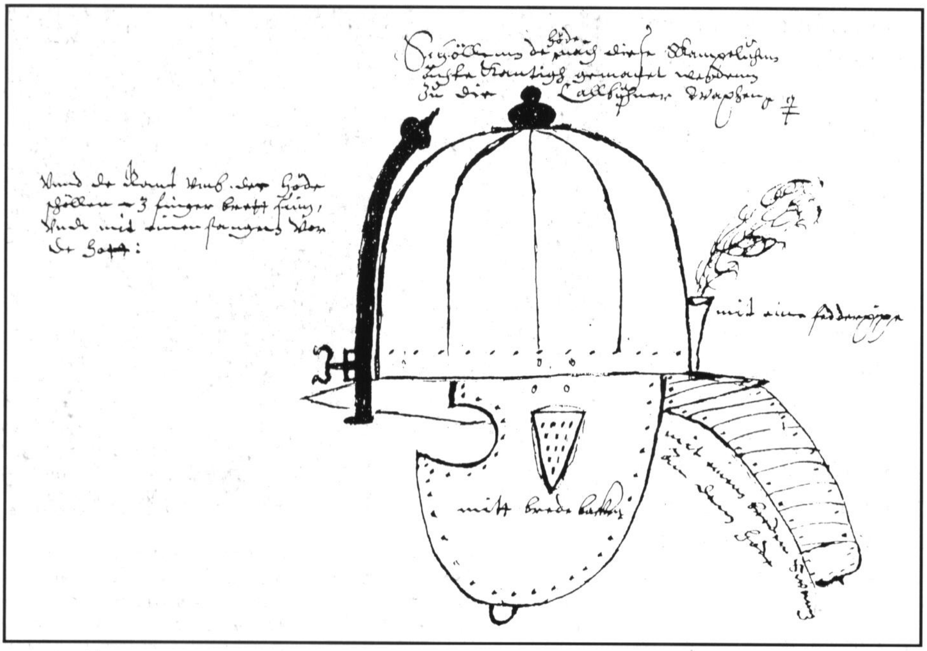


A hat worn by Gustavus in Germany, until he gave it in 1632 as a sign of special favour to Count Wolfgang Otto von Hohenlohe, a captain in the Yellow Regiment. It is made of bone-coloured felted wool lined on the underside with a shaggy crimson fabric, and measures 44cm from front to back. The brim is cocked at the front, and kept in place by a loop and button on the front of the crown. (Hohenlohe family museum, Schloss Neuenstein, Württemburg)

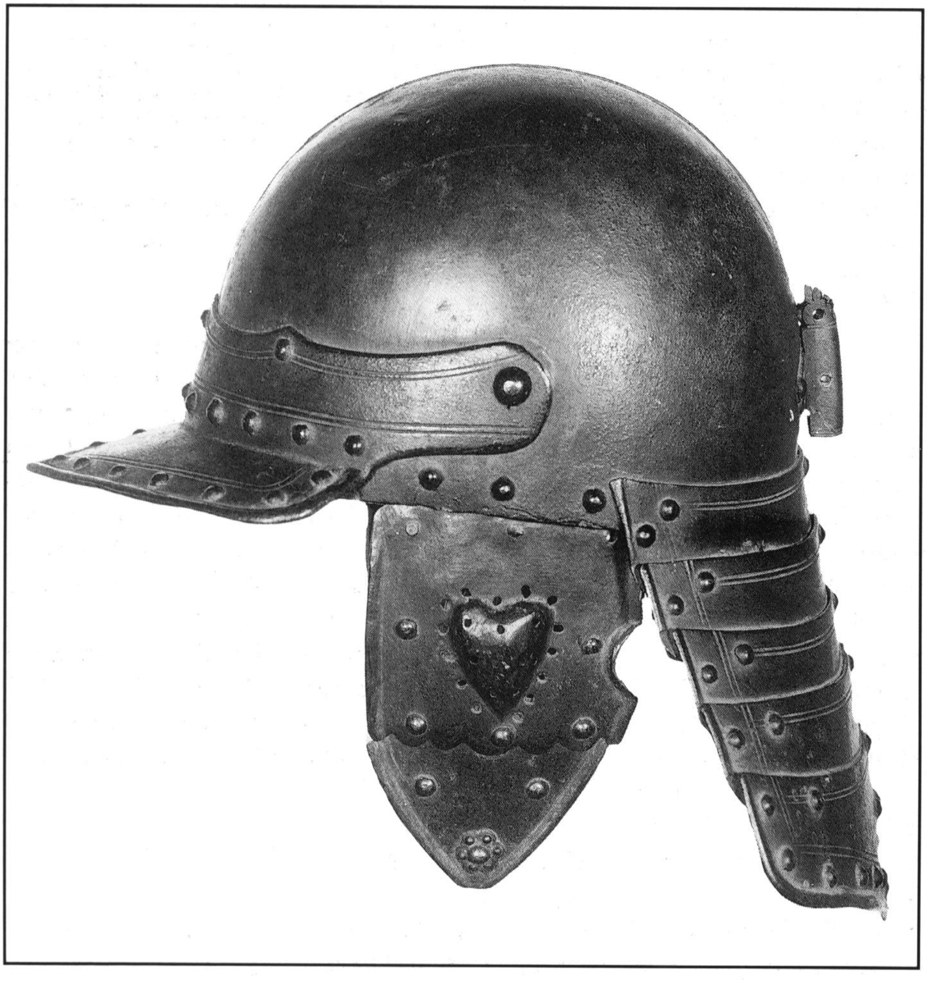
The Klädkammar (Wardrobe) accounts show that virtually all native Swedish infantry sent to Germany were issued with uniforms. By 1632 most would have been re-clothed from captured German stocks. Several accounts suggest that the Swedish brigade wore blue coats at Lützen.

G: Pillage: German mercenary cavalry

The Swedes still have a terrible reputation in some areas of Germany for the destruction the Swedish army inflicted during the Thirty Years' War. The blame should rest, however, not so much with the native Swedes, who were strictly disciplined, as with the Germans themselves, who flooded into Swedish service after Breitenfeld. In August 1632 Gustavus became so concerned that he called together his German officers and gave them a furious telling-off: 'I here it complained of, that the Swedish soldiers are



Pattern drawing of a cavalry helmet found among the papers of the weapons manufacturer Louis De Geer, who moved to Sweden in 1627. This broad-brimmed Polish style is seen mostly in pictures of the 1620s. The German instructions read: (top) 'The hat [i.e. helmet] shall be made eight-faceted after this pattern for the Callbüschner[?] armour'. (Left) 'And the brim on the hat should be three fingers broad, and with a bar at the front of the hat'. (Right) 'With a featherpipe', 'With a broad tail on the hat'. (Cheek piece) 'With broad cheeks'. (Photo after Dahlgren; original in the Leufsta archive, now mostly at the Riksarkivet)



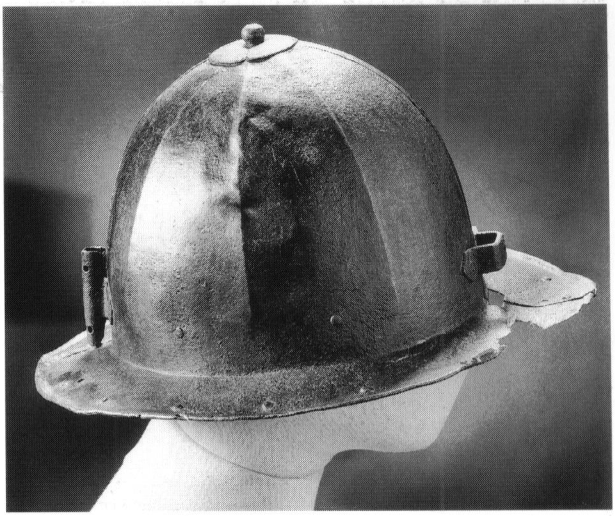
This helmet was preserved until the 1850s at De Geer's arms factory at Finspång, but it is not known if it was actually manufactured in Sweden. It is more solidly made than Eastern-style helmets, and belongs to a different (Western) tradition of helmet making, which found its peak in the three-barred 'pots' used in the English Civil Wars of 1642–51. There is no slot for the sliding nasal-bar so characteristic of Eastern helmets. The cheekpieces are here attached back to front—and belong, in any case, to a different helmet. (AM 16289) more insolent than their enemies . . . But they are not the Swedes, they are the Germans that commit these insolencies . . . this most accursed, devilish robbing and stealing of yours doth . . . much abate my good purposes.' But with his treasury empty he could not pay his troops, and the German mercenaries went on looting as before.

G1: Arquebusier

The arquebusier was one of the two specialised classes of cavalry available in Germany before Gustavus's landings. The arquebusier's principal weapon was the '*Bandelier-rohr*' or arquebus, which hung, attached by a metal spring-clip, on a shoulder belt or 'bandolier'. Ammunition was kept in prepared paper cartridges. These were not, as is often said, invented by Gustavus: they were in use as early as the 1550s, and had been adopted by the military well before 1600. Cartridges were known in German as '*patroner*' (singular '*patron*'), from the same root word as the English 'pattern' and Scots 'patrune' (see MAA 235, p. 40). Arquebusiers kept their cartridges in a special pouch or *Patrontasche* on the right hip. The leather flap or *Flaschen Hängsel* under this had holes or fittings for attaching a powder flask and a wheellock spanner. A painting of the battle of Nördlingen by Snayers shows the cords of these colour-coded, apparently to prevent confusion in the heat of battle.

G2: Horseman (Reiter)

Most of Gustavus's mercenary cavalry were called simply '*Reiters*' (horsemen). Reiters eventually formed a separate, though imprecisely defined troop class, less specialised than the arquebusier or the cuirassier, and so better suited to the diverse tasks required on campaign. In terms of equipment, the Reiter was simply an arquebusier without an arquebus; or, seen another way, a cuirassier without heavy armour. His principal weapon was a pair of pistols – intended primarily for point-blank combat, though used by ill-disciplined units for 'caracoling'. In practice, many Reiters abandoned their armour and wore only buffcoats and broad-brimmed felt hats. Battle paintings and prints suggest that in the early 1630s these buffcoats were still mostly sleeveless. Mercenary cavalrymen were highly conscious of their status as 'cavalier-gentlemen', and decorated their clothing with as much lace, ribbon, silk and other finery as they could afford . . . or steal.



A cavalry helmet with an eight-faceted skull, similar to the De Geer pattern. The neck, nose and cheek guards are all missing. There are several dozen roughly similar helmets in Swedish and Finnish collections, but it is not certain if they were made in Scandinavia or taken in Poland. This example belonged until 1927 to the Reeth family of Sysmä parish 150km north of Helsinki. Two members of the family, who trace their origins to Britain, are said to have served as cavalrymen: David Reid (died 1629) and Alexander Reid (died 1669). (National Museum of Finland, Helsinki, No. 27030:3)

G3: Jesuit priest

Clergy of the fanatical Jesuit order were the favourite targets of the anger of the German Protestants. Their influence on the Catholic rulers of the Empire was undoubtedly one of the chief causes of the Thirty Years' War. We take this figure from German newssheets in which the Jesuits, in their four-cornered *biretta* hats and black gowns, are regularly caricatured. Swedish military chaplains also wore 'uniforms' of a kind. In July 1631, when five Swedish infantry regiments were issued uniforms, their senior regimental chaplains received eight ells of black English cloth, and junior chaplains seven ells of cheaper *packlaken* cloth (WardAccs 1631, items 142–146).

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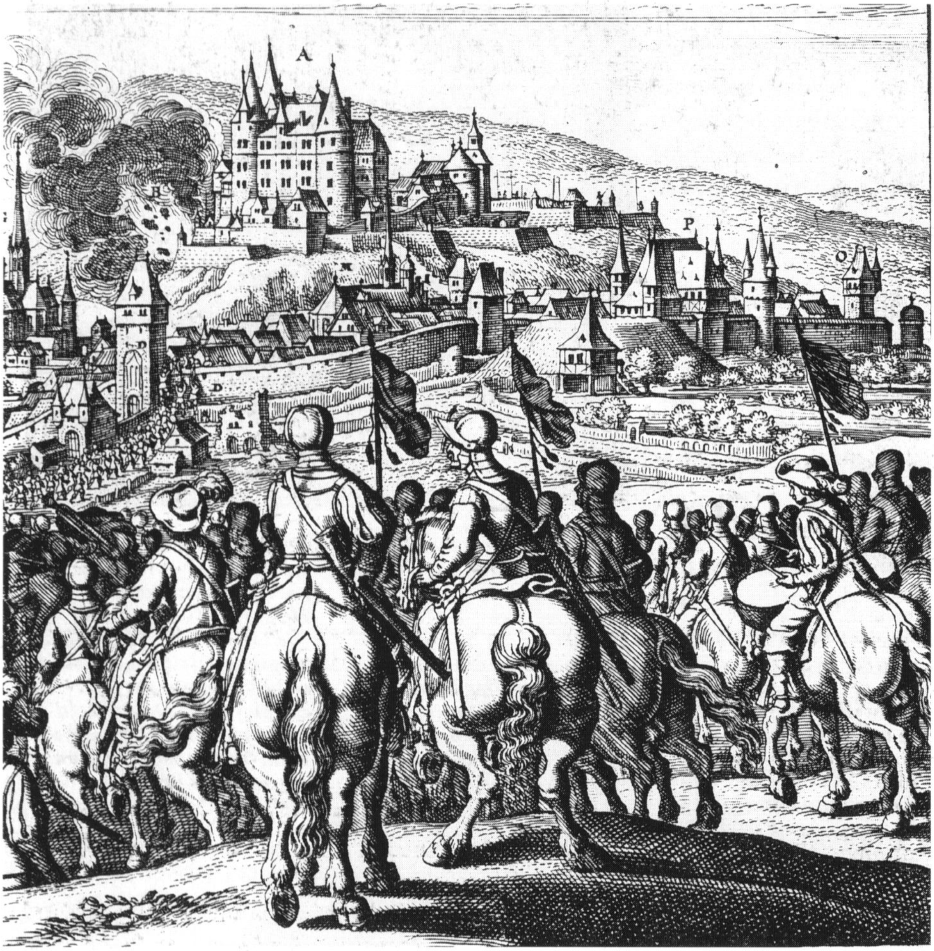

Swedish mercenary arquebusiers at the storm of Kreuznach in March 1632 with their arquebuses hanging from bandeliers. The helmet of the figure on the right has a solid rounded scull and raiseable peak similar to the Finspång helmet. Two alternative ways are shown for slinging the sword. Note also the kettle drummer. (From Theatrum Europaeum, *II)*

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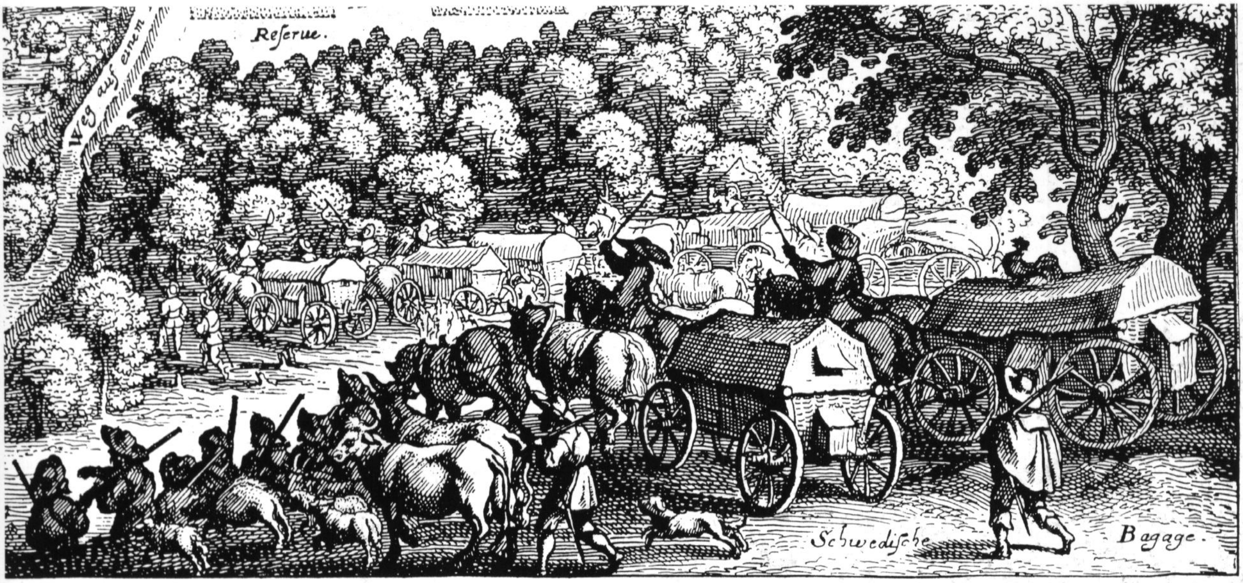

Seventeenth century armies on campaign were like moving villages. When the Blue Regiment of Foot marched into Nördlingen on Easter Monday 1634 it numbered 980 men, 14 guns and 40 munition waggons. The 'tail' of camp-followers followed: children, whores, youths, wives, and 350 widows, bringing the total number of 'mouths' (which the burgers of Nördlingen had to feed) to over 3,000 plus 350 horses and donkeys. The 'Swedish baggage' shown here from a print of the battle of Wittenweier in 1638 shows the sort of waggons that were used to carry a regiment's equipment. (*Theatrum Europaeum, *III)

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